



CITY OF BRADFORD

---

ANNUAL REPORT  
OF THE  
MEDICAL OFFICER

1946

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## PREFACE.

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In submitting my first Annual Report, I wish to pay tribute to the outstanding services which Dr. John J. Buchan rendered to the Corporation during his 33 years as Medical Officer of Health.

Consequent upon his foresight and able guidance, the first Municipal Midwifery Services and the first Municipal General Hospital in the country were established in Bradford, and the health and medical services of the City reached exceptionally high standards.

Dr. Buchan gained the respect and admiration of his staff, and they join me in wishing him many happy years of retirement.

The report on the health of the City has been compiled along the lines laid down in the Memorandum of the Ministry of Health.

The chief vital statistics for the year 1946 were :—

Estimated population	...	...	279,004
Birth-rate	...	...	19.39 per 1,000 of population
Death-rate	...	...	14.46 per 1,000 of population
Zymotic death-rate	...	...	0.17 per 1,000 of population
Tuberculosis death-rate	...	...	0.53 per 1,000 of population
Infantile Mortality rate	...	...	49 per 1,000 births
Maternal Mortality rate	...	...	1.48 per 1,000 total births

As compared with 1945 these figures show an increase of 3.55 in the birth-rate and a decrease of 0.44 in the death-rate. There was a decrease of 0.02 in the zymotic death-rate, and a decrease of 0.03 in the tuberculosis death-rate, while the infantile mortality showed a decrease of 16. The maternal mortality rate showed a decrease of 1.87 per 1,000 total births.

JOHN DOUGLAS,

*Medical Officer of Health.*

TOWN HALL, BRADFORD,

31st July, 1947.



## I.—VITAL STATISTICS.

*Area and Population.* The City of Bradford has an area of 25,504 acres, and the population as adjusted by the Registrar General for the middle of 1946 is 279,040.

### DISTRIBUTION AND DENSITY OF POPULATION.

Wards				Estimated Population, 1946	Area of Wards in Acres	Persons per Acre
Allerton	...	...	...	14,652	2,324	6.3
Bolton	...	...	...	11,910	1,044	11.4
Bradford Moor	...	...	...	16,273	435	37.4
Clayton	...	...	...	10,091	1,888	5.3
East Bowling	...	...	...	14,035	571	24.5
Eccleshill	...	...	...	14,410	1,135	12.6
Exchange	...	...	...	12,734	430	29.6
Great Horton	...	...	...	16,075	848	18.9
Heaton	...	...	...	14,445	883	16.3
Idle	...	...	...	10,579	2,898	3.6
Listerhills	...	...	...	14,601	413	35.3
Little Horton	...	...	...	12,635	322	39.2
Manningham	...	...	...	14,718	368	39.9
North East	...	...	...	13,908	557	24.9
North Bierley East	...	...	...	16,073	3,139	5.1
North Bierley West	...	...	...	16,525	1,142	14.4
South	...	...	...	13,503	414	32.6
Thornton	...	...	...	11,617	2,791	4.1
Tong	...	...	...	14,017	2,998	4.6
West Bowling	...	...	...	16,239	904	17.9
City	...	...	...	279,040	25,504	10.9

The average density of population varies from 3.6 persons per acre in Idle Ward to 39.9 in the Manningham Ward.

*Births.* The number of births registered during the year was 5,404 of which 2,753 were males and 2,651 females. This gives a birth-rate for the year of 19·39 per 1,000, an increase of 3·55 per 1,000, from last year.

AVERAGE QUINQUENNIAL BIRTH-RATES FROM 1876.

1876-80	...	35·6	1901-05	...	22·6	1926-30	...	15·2
1881-85	...	31·1	1906-10	...	20·1	1931-35	...	13·5
1886-90	...	29·8	1911-15	...	19·0	1936-40	...	13·1
1891-95	...	27·5	1916-20	...	15·4	1941-45	...	14·5
1896-00	...	25·1	1921-25	...	17·9	1946	...	19·3

*Illegitimacy.* Of the 5,404 births registered, 426 or 7·8 per cent., were illegitimate. This rate is 3·0 per cent. less than in 1945.

*Deaths.* The total deaths occurring in Bradford in 1946 was 4,319, after making additions and deductions of persons dying away from their place of residence the number becomes 4,035. The corrected death-rate is therefore 14·46 per 1,000, or 0·44 per 1,000 higher than in 1945.

AVERAGE QUINQUENNIAL DEATH-RATES FROM 1876.

1876-80	...	22·3	1901-05	...	16·3	1926-30	...	14·2
1881-85	...	19·9	1906-10	...	15·1	1931-35	...	14·1
1886-90	...	20·9	1911-15	...	15·5	1936-40	...	14·7
1891-95	...	19·7	1916-20	...	16·0	1941-45	...	14·2
1896-00	...	17·9	1921-25	...	14·1	1946	...	14·4

The birth and death-rates in the various wards of the city are set out in the table on page 7.

## BIRTH AND DEATH RATE IN EACH WARD.

Ward	Number		Rates per 1,000	
	Births	Deaths	Births	Deaths
Allerton .. ..	190	177	12·96	12·08
Bolton .. ..	243	150	20·03	12·59
Bradford Moor .. ..	279	226	17·14	13·88
Clayton .. ..	163	115	16·15	11·39
East Bowling .. ..	297	203	21·16	14·46
Eccleshill .. ..	265	196	18·38	13·01
Exchange .. ..	240	176	18·84	13·82
Great Horton .. ..	294	275	18·28	17·10
Heaton .. .. ..	229	224	15·85	15·21
Idle .. .. ..	149	161	14·08	15·21
Listerhills .. ..	270	212	18·49	14·51
Little Horton .. ..	386	248	30·55	19·62
Manningham .. ..	398	249	27·04	16·91
North East .. ..	342	229	24·59	16·46
North Bierley East ..	300	211	18·66	14·24
North Bierley West ..	279	221	16·88	13·37
South .. .. ..	321	196	23·77	14·51
Thornton .. .. ..	194	123	16·69	10·58
Tong .. .. ..	241	192	17·19	13·69
West Bowling .. ..	324	251	19·90	15·45
City .. .. ..	5,404	4,035	19·36	14·46

*Mortality at different Ages.* The following Table shows the total deaths in each age group.

NUMBER OF DEATHS IN EACH YEAR AT DIFFERENT AGE PERIODS  
DURING 1945-6.

Age	1945	1946	Age	1945	1946
Under 1 year	271	265	35—45 years ..	150	148
1—2 years ..	27	17	45—55 ,,, ..	327	316
2—5 ,,, ..	28	13	55—65 ,,, ..	676	712
5—15 ,,, ..	53	30	65—75 ,,, ..	1132	1177
15—25 ,,, ..	52	46	Over 75 years..	1114	1230
25—35 ,,, ..	72	81			

The infantile mortality rate for 1946 was 49 per 1,000 births, as against 65 for 1945, while the maternal mortality rate was 1·43 per 1,000 total births, as compared with 3·3 in 1945. The mortality between one and sixty-five years was 5·8 per 1,000, and over sixty-five years 94·4 per 1,000.

*Public Institutions.* The accommodation in all kinds of institutions available for Bradford amounts to more than 3,800 beds or 1·3 per cent. of the population, or about 1 in 80.

VOLUNTARY HOSPITALS, 1946.

Hospital	Number of beds	Character of cases	Cases admitted to Hospital	Cases treated in outdoor departments
Bradford Royal Infirmary ..	415	General ..	8,447	31,467*
Bradford Children's Hospital	104	Children ..	2,213	4,183
Royal Eye and Ear Hospital	84	Eye and Ear	5,395	19,052
Totals .. ..	603	—	16,055	54,702

\* Exclusive of dental cases.

At the out-patient department of the Bradford Royal Infirmary 31,465 persons were treated as out-patients, and 7,849 as casualty cases.

and 359 as dental cases. The number of attendances made by out-patients was 153,374, and by casualty cases 25,955.

The total number of patients admitted to municipal hospitals in 1946 was 14,743. The nature of the cases is given elsewhere in this report in dealing with each hospital. On the 31st December, 1946, there were 710 patients maintained in institutions for the mentally defective.

At the end of the year the number of persons in receipt of relief in Bradford was : Institutional, 985 and Domiciliary, 1,816 equal to 9·1 per 1,000 of the population.

The number of deaths in public institutions is given below and on page 10.

#### DEATHS IN PUBLIC INSTITUTIONS, 1945-6.

Name of Institution	1945	1946
Bradford Public Assistance Institutions ..	149	173
Clayton Public Assistance Institution ..	10	20
Other Public Assistance Institutions ..	2	8
Menston Asylum .. .. ..	58	49
Storthes Hall Asylum .. .. ..	5	6
Other Asylums .. .. ..	1	10
Roval Infirmary .. .. ..	174	201
Duke of York Home .. .. ..	40	26
Regional Radium Institute .. .. ..	18	16
Children's Hospital .. .. ..	83	60
Eye and Ear Hospital .. .. ..	9	5
St. Catherine's Home .. .. ..	19	12
Other Voluntary Hospitals .. .. ..	30	17
St. Luke's Hospital .. .. ..	1147	1,200
Leeds Road Hospital .. .. ..	40	22
Bierley Hall Hospital .. .. ..	25	26
Grassington Sanatorium .. .. ..	2	4
North Bierley Joint Hospital .. .. ..	1	1
Calverley Joint Hospital .. .. ..	1	1
Other Institutions .. .. ..	27	30
Total ..	1841	1888

It will be noted that in 1946 201 deaths, or 1·3 per cent. of the total deaths, occurred in Public Assistance Institutions; 65 deaths, or 2·2 per

cent., in Lunatic Asylums; 337 deaths, or 8·1 per cent., in Voluntary Hospitals; and 1,250 deaths, or 30·9 per cent., in Municipal Hospitals.

The percentage of the total deaths in the city occurring in public institutions in 1946 was 46·7. During the past 20 years there has been a continuous increase in the proportion of deaths occurring in public institutions, the rise in the percentage of total deaths being from under 25 per cent. to 46.

The age incidence of deaths in Public Institutions is shown in the following table :—

Age period	Public Assistance Institutions	Lunatic Asylums	Voluntary Hospitals	Municipal Hospitals	Other Institutions	Total	Per cent. of Deaths at each age
Under 1	—	—	41	141	14	196	73·9
1—2	—	—	10	6	—	16	94·5
2—5	—	—	4	3	—	7	53·8
5—15	1	—	15	14	—	30	100·0
15—25	—	2	6	23	1	32	69·5
25—35	1	—	8	40	1	50	61·7
35—45	3	6	14	52	—	75	50·6
45—55	6	12	57	123	3	201	63·6
55—65	13	13	71	229	2	328	46·0
65—75	49	15	66	347	6	483	41·0
75 and over	128	9	42	275	16	470	38·2
Total ..	201	57	334	1,253	43	1,888	46·7

This table shows that nearly 62 per cent. of the deaths between one year and forty-five years in the City occur in Public Institutions.

*Certification of Deaths.* 3,889 deaths, or 90·0 per cent., were certified by medical practitioner; 299, or 6·9 per cent., by the coroner after inquest, and 131, or 3·1 per cent., where, after inquiries were made by the coroner, it was found that inquests were unnecessary. The table on the following page shows the causes of death as found at the inquests held.

**RETURN SHOWING THE NUMBER OF INQUESTS HELD, AND VERDICTS  
RETURNED DURING THE YEAR ENDED 31ST DECEMBER, 1946.**

CAUSE OF DEATH	Wilful Murder	Manslaughter	Temporary Insanity	Intemperance	Silicosis and Industrial Injuries	Negligence	Accidental	Operations and Anasthetics	Natural Causes	Open Verdicts	Totals	Remarks
	—	—	—	—	—	—	—	—	—	—	—	
Violence . .	—	1	—	—	—	—	—	—	—	—	1	
Burns and Scalds . .	—	—	—	—	—	—	15	—	—	—	15	
Railways . .	—	—	—	—	—	—	—	—	—	—	—	
Motors . .	—	—	—	—	—	—	39	—	—	—	39	
Other Vehicles	—	—	—	—	—	—	3	—	—	—	3	
Machinery	—	—	—	—	—	—	2	—	—	—	2	
Falls . .	—	—	—	—	—	—	62	—	—	—	62	
Suffocation	—	—	—	—	—	—	2	—	—	—	2	
Drowning . .	—	—	—	—	—	—	—	—	—	2	2	
Poisoning . .	—	—	—	—	—	—	3	—	—	5	8	
Other Causes	—	—	—	—	6	—	11	5	—	—	23	
<b>SUICIDES:—</b>												
Drowning	—	—	2	—	—	—	—	—	—	—	2	
Hanging . .	—	—	6	—	—	—	—	—	—	—	6	
Poisoning	—	—	22	—	—	—	—	—	—	—	22	
Other Means	—	—	5	—	—	—	—	—	—	—	5	
Natural Causes	—	—	—	—	—	—	—	15	—	—	15	
<b>Totals . .</b>	<b>—</b>	<b>1</b>	<b>35</b>	<b>—</b>	<b>6</b>	<b>—</b>	<b>138</b>	<b>5</b>	<b>15</b>	<b>7</b>	<b>192</b>	

There were also 299 cases where, after enquiries were made, the Coroner found that Inquests were not necessary.

TABLE A.  
VITAL STATISTICS IN BRADFORD FROM 1916.

Year	Population	Birth Rate	Death Rate	Zymotic Death Rate	Infantile Mortality Rate
1916	*271,105	16.67	15.99	0.61	118
1917	*266,338	13.06	15.34	0.81	132
1918	*259,707	13.30	19.13	1.07	123
1919	*282,714	13.40	16.27	0.31	113
1920	293,979	20.52	13.31	0.42	93
1921	291,100	19.57	13.72	0.66	109
1922	291,300	17.92	14.02	0.36	87
1923	290,800	18.19	13.75	0.48	78
1924	290,200	16.94	14.86	0.31	92
1925	290,200	16.63	13.97	0.65	95
1926	288,700	16.31	13.58	0.47	92
1927	293,200	14.73	14.57	0.52	92
1928	288,500	15.32	13.60	0.38	69
1929	289,200	15.03	15.66	0.50	80
1930	293,254	14.92	13.45	0.44	75
1931	300,900	13.56	14.21	0.24	71
1932	296,300	13.56	13.89	0.26	75
1933	295,100	13.22	14.68	0.32	79
1934	293,650	13.68	13.35	0.34	62
1935	292,200	13.55	14.28	0.38	64
1936	290,500	13.42	14.93	0.43	82
1937	289,510	13.85	14.64	0.34	69
1938	288,700	13.51	13.76	0.26	58
1939	287,500	12.42	14.91	0.19	61
1940	*287,500	12.81	15.85	0.20	68
1941	*287,500	12.35	14.81	0.18	68
1942	*287,500	13.90	13.29	0.20	59
1943	*287,500	14.46	14.43	0.18	58
1944	*287,500	16.15	13.61	0.17	53
1945	*262,660	15.84	14.90	0.19	65
1946	*279,040	19.39	14.46	0.15	49

\* Civil population.

## II.—SANITARY CIRCUMSTANCES OF BRADFORD.

(A) *Water.* The water supply of Bradford, as provided by the Corporation Waterworks, is obtained from several upland surface sources and is distributed throughout the city by gravitation. The supply is constant and the water, on chemical analysis, exhibits a high standard of purity. Samples are taken regularly from the various sources of supply and distributing points in the City and the bacteriological results of the examinations made are shown on pages 92 and 93. Generally the water is a soft upland water and one source of supply only exhibits in its natural state any appreciable degree of plumbosolvency. This is the supply from Thornton Moor, 1,241 feet above sea level, where water is collected from peaty uplands to the west of the City. This water is treated at the reservoir to reduce the plumbosolvency.

*Average Results of Analyses for Plumbosolvency of Water as Distributed.*

	Grains per Gallon	
	Lead	Lead taken up to 24 hours
<b>THORNTON MOOR WATER SUPPLY:</b>		
36 samples before 8 a.m. . . .	0.0000	0.0394
36 samples after 1 p.m. . . .	0.0000	0.0437
<b>INTERMEDIATE LEVEL SUPPLY:</b>		
36 samples before 8 a.m. . . .	0.0000	0.0426
36 samples after 1 p.m. . . .	0.0000	0.0419
<b>LOW LEVEL WATER SUPPLY:</b>		
36 samples before 8 a.m. . . .	0.0000	0.0490
36 samples after 1 p.m. . . .	0.0000	0.0495

At the end of 1946, 45 farms and 118 houses in isolated localities were not connected with the Corporation mains. The supplies in these cases were under constant supervision. There were 12 samples of suspected water submitted for chemical examination, of which 4 were reported against.

The number of notices served to secure a proper water supply (Sec. 53 Bradford Corporation Act, 1925) was 19, affecting 74 houses.

(B) *Drainage and Sewerage.* There are 193 farms and 800 houses not connected with the Corporation sewers, 38 of the farms and 56 houses being in the Clayton area.

(C) *Closet Accommodation and Scavenging.* During the year 586 new water closets were provided. These included 259 additional water closets for dwelling-houses. Ninety-five water closets were substituted for waste water closets (tippler), and one was substituted for a privy, the ash pit in connection with them being replaced by a dust bin. Two hundred and twenty-six water closets were provided for factories and workshops, and 16 for other premises.

#### ESTIMATE OF SANITARY ACCOMMODATION AT THE END OF 1946.

##### (i.) Dwelling-houses.

	No. of Houses	Water Closets	Waste Water Closets	Privies
More than one sanitary convenience to each house ...	7343	13594	301	2
One to each house ... ...	65880	61480	4150	150
Less than one to each house	17182	9400	49	250
Totals ... ...	90405	84474	4500	402

Apart from the houses in clearance areas, the work of conversion of privy middens has now been practically completed, the remaining number being on farms and outlying houses in the city where sewers are not reasonably available.

### SUMMARY.

		<i>Number</i>	<i>Percentage</i>
Houses with water closets ...	...	84,474	94.3
Houses with waste water closets ...	...	4,500	4.8
Houses with privies ...	...	402	0.9

### (ii.) Business and other Premises.

	No. of Premises	Water Closets	Privies
Factories, workshops, and other business premises ...	4947	13266	18
Places of worship, schools, public institutions, clubs, &c.	738	4788	54
Totals ...	5685	18054	72

Number of water closets ...	...	102,528
Number of waste water closets ...	...	4,500
Number of privies ...	...	474
		107,502

Number of dry ash pits ...	...	240
Number of dust bins ...	...	106,854
		107,129

Four hundred and forty-five plans have been approved by the Health Committee for the construction of works, as follows :—334 water closets affecting 327 dwelling-houses; 10 water closets affecting 6 licensed premises; 3 urinals affecting 3 licensed premises; 226 water closets affecting 71 factories and workshops; 19 water closets affecting schools, clubs ,and other premises, and 1 reconstruction scheme affecting 1 dwelling-houses, and 76 for conversion of houses into flats.

(D) *Sanitary Inspection of District.* The number of tests to drains and sanitary fittings made by the Sanitary Inspectors during the year was 1945, of which 703 were volatile tests with 48 positive results, 1211 were coloured water tests with 200 positive results, 31 smoke tests with 14 positive results.

The drainage of 5 blocks of property, comprising 25 houses, was dealt with under Section 48 of the Public Health Act, 1936. The defects were found as the result of tests applied to the drains.

The District Sanitary Inspectors have made 57,709 inspections and visits for the investigation and suppression of nuisances. The total number of nuisances reported was 3,130. The statement on the following pages shows the nature and the amount of work performed by the Inspectors during the year.

During the year 3,960 complaints as to nuisance were received, as against 2,860 the previous year. The number of statutory notices served for the abatement of nuisances was 3,130, as against 1,072 last year. The number of preliminary notices served for dangerous places to be made secure was none. There were 19 of these places dealt with, as against 28 last year. Three cases were reported for prosecution at the City Court for failing to obey nuisance orders; the 3 cases were withdrawn.

#### PARTICULARS OF WORK DONE, 1945-46.

<i>Routine Visits and Inspections:</i> —		1945	1946
No. of Houses inspected under Public Health Acts .. ..	226	8994	
No. of Houses in respect of which notices were served requiring defects to be remedied .. .. .. ..	65	3058	
No. of Houses where defects remedied after formal notice:—			
(a) By owners .. .. .. ..	29	3451	
(b) By L.A. on default .. .. .. ..	14	301	
No. of ordinary visits.. .. .. .. ..	21042	28408	
No. of Houses rendered fit without service of formal notices ..	467	951	

<i>Inspections and Visits:</i> —		1945	1946
No. of complaints investigated .. . . . .	3471	3960	
No. of ordinary visits and inspections (other than dwelling-houses) .. . . . .	1464	2970	
No. of Factories and Workshops visits and inspections .. . . . .	1740	76	
No. of Offensive Trade Premises visits and inspections .. . . . .	40	91	
No. of Schools inspected .. . . . .	55	50	
No. of Graveyards inspected .. . . . .	1	5	
No. of visits to Common Lodging Houses .. . . . .	64	58	
No. of Houses let in lodgings visited .. . . . .	2	19	
No. of Canal Boats inspected .. . . . .	—	—	
No. of Cinemas visited .. . . . .	20	63	
No. of Piggeries visited .. . . . .	11	3	
<i>Drainage and Sanitary Arrangements:</i> —			
Choked drains cleansed .. . . . .	380	685	
Drains amended .. . . . .	185	266	
Drains reconstructed .. . . . .	138	306	
Extra drains provided .. . . . .	48	75	
Cellars drained .. . . . .	8	12	
Drains underneath houses abolished .. . . . .	6	4	
Drainage systems intercepted from sewer .. . . . .	11	5	
Open drain inlets trapped .. . . . .	15	4	
Waste pipes trapped .. . . . .	23	42	
Waste pipes disconnected .. . . . .	29	45	
Rainwater pipes disconnected .. . . . .	28	42	
Rainwater conductors repaired or renewed .. . . . .	304	442	
Sinks repaired or renewed .. . . . .	101	99	
New sinks provided .. . . . .	27	74	
No. of Houses reported for provision of Water Closets .. . . . .	21	33	
Water closet pedestals renewed .. . . . .	80	102	
Water closets and flushing apparatus repaired .. . . . .	162	190	
Water closets cleansed .. . . . .	7	9	
Water closet apartments cleansed and limewashed .. . . . .	7	11	
W.C. apartments properly lighted and ventilated .. . . . .	—	29	
General repairs to Water Closets .. . . . .	266	351	
Additional W.C. accommodation provided .. . . . .	47	74	
Soil pipes repaired and renewed .. . . . .	22	30	
Indoor soil pipes abolished .. . . . .	—	2	
Privy apartments cleansed and limewashed .. . . . .	2	3	
Privy structures abolished .. . . . .	—	3	
Deposits of slops in ash pits prohibited .. . . . .	—	—	
Ash pits abolished .. . . . .	—	4	
Dust bins repaired and renewed .. . . . .	2657	1708	
Houses provided with new dust bins .. . . . .	1025	586	
Urinals cleansed, amended, or screened .. . . . .	3	23	
Urinals remodelled .. . . . .	1	2	
New urinals provided .. . . . .	—	1	
<i>Dwelling-houses, etc.:—</i>			
Dampness excluded .. . . . .	249	424	
Roofs repaired .. . . . .	199	410	
Houses or parts cleansed and limewashed .. . . . .	21	22	
Verminous houses dealt with .. . . . .	117	85	

					1945	1946
Ventilation improved..	..	..	..	..	22	34
Windowcords repaired or renewed ..	..	..	..	..	257	398
Lighting improved ..	..	..	..	..	3	10
General repairs executed ..	..	..	..	..	838	1261
Kitchen ranges repaired or renewed ..	..	..	..	..	123	165
Washing coppers provided or renewed ..	..	..	..	..	12	29
Handrails provided ..	..	..	..	..	1	6
New food stores provided and ventilated ..	..	..	..	..	—	7
Water supply improved ..	..	..	..	..	71	104
Houses supplied with water ..	..	..	..	..	10	—
Outbuildings repaired ..	..	..	..	..	1	3
Overcrowding abated..	..	..	..	..	—	—
Cellar areas cleansed ..	..	..	..	..	—	1

*Courts, Back-yards, Stable-yards, etc.:—*

Yard and passage paving repaired ..	..	..	..	..	10	13
Yards repaved ..	..	..	..	..	1	4
Yards and passages newly paved ..	..	..	..	..	—	2
Yards cleansed ..	..	..	..	..	16	16
Passages cleansed and limewashed ..	..	..	..	..	—	1
Manure pits repaired ..	..	..	..	..	1	—
Manure pits provided ..	..	..	..	..	—	—

### *Keeping of Animals, etc.:—*

Improper keeping of swine prohibited	..	..	..	..	—	1
Piggeries repaired	..	..	..	..	—	—
New Piggeries provided	..	..	..	..	—	—
Piggeries abolished or disused	..	..	..	..	—	2
Improper keeping of fowls, etc., prohibited	..	..	..	..	4	13
Accumulations of offensive matter, etc., removed	..	..	..	17	39	
Accumulations of manure removed	..	..	..	..	1	9

### *Infectious Diseases:—*

No. of Zymotic Diseases investigated .. . . . . 1099 1006

### *Factories:—*

### *Drain Testing:—*

### Number of volatile tests:—

## Number of colour tests:—

Positive .. .. .. .. .. .. .. ..	99	200
Negative .. .. .. .. .. .. .. ..	609	1011

## Number of smoke tests (Rocket):—

Positive .. .. .. .. .. .. .. ..	15	14
Negative .. .. .. .. .. .. .. ..	18	17

## Miscellaneous Nuisances:—

Dangerous places referred to City Engineer .. .. .. .. ..	28	58
Dangerous places made secure .. .. .. .. ..	21	47
Choked Street Gulleys reported .. .. .. .. ..	25	71
Wastes of Water reported .. .. .. .. ..	37	60

## Samples of Water taken for:—

(a) Chemical Analysis .. .. .. .. ..	146	237
(b) Bacteriological Examination .. .. .. .. ..	287	312
Offensive Trades .. .. .. .. ..	—	—
Effluvium Nuisances abated .. .. .. .. ..	4	7

The number of visits made to Burial Grounds in the City was 5. No irregularities were observed.

During the year the Woman Sanitary Inspector has made 391 visits to the women's conveniences in the public streets, parks, cemeteries and recreation grounds, for the purpose of making inspection as to the condition of the conveniences set apart for the use of females, with the result that in 28 instances nuisances were found. These were notified verbally to the person in charge and abated.

(E) *Workshop and Shop Inspection, etc.*

## (1) FACTORIES,

## I.—INSPECTIONS FOR PURPOSES OF PROVISIONS AS TO HEALTH, INCLUDING INSPECTIONS MADE BY SANITARY INSPECTORS.

Premises	Inspections	Number of Written Notices	Occupiers Prosecuted
FACTORIES with mechanical power ..	2231	36	—
FACTORIES without mechanical power ..	73	—	—
+ OTHER PREMISES under the Act .. (Including works of building and engineering construction but not including outworkers' premises.)	1	—	—
<b>TOTALS ..</b>	<b>2305</b>	<b>36</b>	<b>—</b>

## II.—DEFECTS FOUND.

Particulars	Number of Defects			Number of defects in respect of which Prosecutions were instituted
	Found	Remedied	Referred to H.M. Inspector	
Want of cleanliness .. .. ..	23	22	—	—
Overcrowding .. .. ..	—	—	—	—
Unreasonable temperature .. .. ..	5	—	—	—
Inadequate ventilation .. .. ..	2	1	—	—
Ineffective drainage of floors .. .. ..	—	—	—	—
Sanitary accommodation { insufficient .. .. ..	17	32	—	—
unsuitable or defective .. .. ..	54	46	—	—
not separate for sexes .. .. ..	2	—	—	—
Other offences .. .. ..	88	124	—	—
(Not including offences relating to Home Work or offences under the Sections mentioned in the Schedule to the Ministry of Health (Factories and Workshops Transfer of Powers) Order, 1921, and re-enacted in the Third Schedule to the Factories Act, 1937.)				
TOTALS .. .. ..	191	225	—	—

### III.—REGISTERED WORKSHOPS, ETC.

Workshops on the Register (S.131) at the end of the year										Number
Workshops	..	..	..	..	..	..	..	..	..	974
Factory Bakewholes	..	..	..	..	..	..	..	..	..	410
									TOTAL	1384

## OUTWORKERS' LIST, SECTION 110.

NATURE OF WORK.	Lists received from Employers.			Notices served on Occupiers as to keeping or sending in Lists.	Outwork in Infected premises Secs. 109-10 Instances	Prosecutions. Failing to send in Lists.			
	Sending twice in the year								
	Lists	Outworker	Contractors Workmen						
Wearing Apparel:—									
(1) Making, etc.									
(2) Cleaning and	33	151	269	18	12	49			
Washing ...	...	...	...	...	...	96			
Furniture and Upholstery ...	1	10	—	—	—	1			
Curtains and Furniture Hangings ...	2	2	4	—	—	6			
Household Linens ...	1	12	4	—	—	1			
Umbrellas ...	1	5	—	—	—	1			
Electro Plate ...	1	—	—	—	—	—			
Weaving (Burling) ...	27	68	98	8	3	14			
Sacks ... ...	1	1	—	—	—	—			
	67	252	377	27	15	64			
						158			

## V.—OTHER MATTERS.

Class	Number
Matters notified to H.M. Inspector of Factories:—	
Failing to affix Abstract of the Factory and Workshop Acts (S. 133), 1901      ...      ...      ...      ...      ...      ...      ...      ...	10
Action taken in matters referred by H.M. Inspectors as remediable under the Public Health Act, but not under the Factory and Workshop Act (S. 5), 1901	Notified by H.M. Inspectors      ...      ... Reports (of action taken) sent to H.M. Inspector
Other Reports to H.M. Inspectors	35
Homework—Secs. 107 to 110:—	
Employers failing to keep list of outworkers (form 44)	3
Notices served on employers for failing to keep or send in lists	161
List of outworkers not received	—
Cases of outwork in infected and unwholesome premises	—
Outworkers visited	275
Prosecutions for failing to send in list of outworkers	—

## (2) SHOPS ACTS, 1912—1934.

*Shops Inspected.* The total number of shops on the Register is 6,350, and the number of visits and investigations made was 5,935. The number of shops visited in which young persons were employed was 615, and in 461 instances the employers had failed to exhibit the notice referring to the specific provisions of the Act. All the employers were cautioned.

In 376 shops no notice specifying the day of the weekly half-holiday were displayed, and the offenders were all cautioned. In 8 instances shops were found open and the occupiers selling non-exempted articles on the weekly half-holiday. These offenders were cautioned. The occupiers of 112 shops were found not displaying the notices specifying the exempted trades for which they were remaining open after the closing hour on the weekly half-holiday, or at night, and they were all cautioned. In 376 cases employers had failed to provide the prescribed form relating to their assistants' weekly half-holiday. All these offenders were cautioned. In 4 cases shop assistants were found employed after half-past one o'clock on their specified weekly half-holiday; all these offenders were cautioned. In 1 case shop assistants were not being allowed correct interval for meals; the employer was cautioned.

*Shops (Hours of Closing) Act 1928.* As a result of night inspections 2 shop-keepers were found carrying on business after the closing hour. The offenders were cautioned.

*Section 72 P.H.A. F. & D. Act, 1938.* Offences relating to food storage in shops referred to Food Inspectors, 3.

*Shops (Sunday Trading Restriction) Act, 1936, and Retail Meat Dealers' Shops (Sunday Closing) Act, 1936.* During visits and observations on Sundays 1 shopkeeper was found open. In 115 instances notices were not displayed stating for what purpose the shop was open. Nineteen shopkeepers were not keeping Form VII. Two assistants had been employed on more than three Sundays in one month. Eleven assistants were not allowed a compensatory holiday after having been employed on a Sunday. All the offenders concerned were cautioned.

*Young Persons (Employment) Act 1938.*

Number of visits made by Shops Inspector ... ...	79
Number of young persons employed ... ...	119

Without Prescribed Forms :—

Notice re weekly half-holiday ... ...	15
Record of hours of employment ... ...	13
Abstract of provisions ... ...	11
Weekly half-holiday not allowed ... ...	1

All the above offenders were cautioned.

## OFFENCES.

Nature of Offence	No. of Cases	No. of Warnings	Prosecutions		
			No. of Cases	Fines £ s. d.	Costs £ s. d.
<i>Shops Act, 1912—</i>				—	
Prescribed form relating to half holiday of assistants not displayed ... ... ...	381	381			
Correct meal times not allowed to assistants ... ... ...	1	1			
Half holiday not allowed to assistants ... ... ...	6	6			
Notice of day of weekly half holiday not fixed ... ...	47	47			
Shop open after closing hour on weekly half holiday ...	8	8			
Hawking on weekly half holiday after hour fixed by Order	—	—			
Shop open after closing hour fixed by Closing Order ...	—	—			
Official copy of Closing Order not displayed in shop ...	—	—			
Notices not displayed in mixed shops after closing hour ...	112	112			
<i>Shops (Hours of Closing) Act, 1928—</i>					
Shop open after closing hour...	4	4			
<i>Shops (Sunday Trading Restriction) Act 1936—</i>					
Shop open for non-exempted sales ... ... ...	1	1			
Notices not displayed stating purpose for which shop open	115	115			
Without Form VII ... ...	19	19			
Assistants employed on more than three Sundays in a month	4	4			
Assistants not allowed a compensatory holiday ... ...	11	11			
<i>Retail Meats Dealers' Shops (Sunday Closing) Act, 1936—</i>					
Shop open on Sunday ...	—	—			
<i>Shop Act, 1934—</i>					
Abstract relating to young persons not displayed. Forms H and J ... ... ...	193	193			
Young persons employed more than 48 hours per week ...	5	5			
Young persons employed in shop after being employed in factory for permitted hours...	—	—			
Without Schedule of Young persons hours—Form F ...	199	199			
Without overtime record—Form G ... ... ...	69	69			
Without notice relating to seats—Form K ... ...	227	227			
Young persons employed overtime in excess of yearly limit	—	—			
Overtime worked by young persons in more than 6 weeks	—	—			
Totals ... ...	1402	1402	Nil.	Nil.	Nil.

## ADMINISTRATION OF THE SHOPS ACTS, 1912-1934.

### *Summary of Inspections and Offences.*

#### INSPECTIONS.

Number of shops on register ...	... ... ... ...	6,350
Number of shops visited where assistants are employed ...	... ...	1,776
Number of shops visited where young persons are employed ...		615
Total number of inspections ...	... ... ... ...	5,935

### (3) RAG FLOCK ACT, 1911—1928.

During the year 12 samples of rag flock were submitted to the City Analyst. All samples conformed to the standard of cleanliness.

#### (F) Premises, Etc., Controlled by Bye-laws or Regulations.

##### (1) COMMON LODGING HOUSES.

At the end of the year there were 7 registered common lodging houses in the city, comprising 38 sleeping rooms, and affording nightly accommodation for 383 males, 4 females, and 4 couples.

The total number of persons accommodated during the year was 116,551. The nightly average was 343 representing 86·8 per cent. of the accommodation available.

The following table shows the number of nights spent by single men, women, young persons, and couples in common lodging houses during the year :—

ADULTS			8 to 21 years		Under 8 years	
Males	Females	Couples	Males	Females	Males	Females
113639	1456	728	—	—	—	—

The whole of the houses have been limewashed and cleansed in accordance with the Public Health Act, 1936.

The total number of inspections made during the year was 58. There have been no cases of infectious disease reported during the year in any Common Lodging House. No difficulties have been experienced in gaining admittance and it has not been necessary to resort to Police Court proceedings.

### (3) OFFENSIVE TRADES, Etc.

The number of offensive trades within the city is 350, of which 312 are fish friers. The number of visits of inspection made to offensive trades other than fish friers was 91.

### (4) SCHOOLS.

The number of visits made for the sanitary inspection of schools was 50. Minor defects have been noted and remedied at various schools.

### (5) INSPECTION OF CINEMAS AND OTHER PLACES OF PUBLIC ENTERTAINMENT.

The periodical inspection of these places was carried out as usual by the District Sanitary Inspectors, and 63 recorded inspections have been made during the year. Minor defects which were observed were remedied on the attention of the management being called thereto. A number of visits were made during the year in regard to the exclusion of children from cinemas owing to the prevalence of zymotic disease, but no breaches of the law were observed.

#### *G. Other Sanitary Work.*

### SMOKE ABATEMENT.

During the year a number of smoke observations were carried out by the District Sanitary Inspectors. The Council have been unable to appoint a special Smoke Inspector. Three special smoke nuisances were investigated.

In all cases where notices were served every effort is made to arrive at the real cause of smoke and advise the firms concerned of the remedies that might be adopted. Unfortunately the causes of smoke are not always apparent as defaults or careless acts by the boiler-house staff cannot be seen by the Inspector whilst observing the chimney; the majority of boiler-houses are not equipped with measuring or recording instruments.

During the past sixteen years the Corporation have maintained two deposit gauges and undertaken local observations for the investigations of atmospheric pollution. One gauge is situated in a northern residential district; the other gauge in the centre of the city, being respectively known as North and Central. The contents of the gauges are examined monthly by the City Analyst and the results computed in tons per square mile.

## ANNUAL DEPOSITS, 1940-46.

TONS PER SQUARE MILE.

Year	Undissolved Matter						Lime as Ca**
	Total Solids	Soluble in CS <sub>2</sub> (Tarry Matter)	Insoluble in CS <sub>2</sub> (Combustible Matter)	Ash	Sulphate as SD4"	Chlorine as Cl'	
North	199.54	3.00	25.93	57.21	24.77	18.45	7.56
	238.96	4.75	32.29	71.63	34.02	28.10	2.91
	229.75	3.32	28.99	72.26	26.30	12.45	4.32
	201.50	2.78	23.81	67.45	25.39	21.75	4.36
	173.72	6.13	17.50	34.91	25.83	26.57	7.49
	201.22	5.35	19.75	36.48	30.71	32.83	10.88
	194.91	3.60	36.12	40.34	29.31	19.96	7.90
	157.63	4.05	20.40	31.48	36.17	24.43	8.31
Central	243.72	4.01	41.75	85.37	26.67	22.19	11.73
	305.08	5.82	55.26	101.47	30.80	24.29	6.35
	247.33	4.94	42.78	99.69	24.30	15.60	6.04
	278.64	4.41	45.86	101.43	28.44	27.15	6.70
	234.77	6.42	36.20	70.88	26.40	24.82	8.58
	246.00	6.83	35.77	68.91	29.03	35.14	9.04
	276.86	3.82	53.53	80.20	34.34	23.20	8.61
	255.92	5.30	40.01	78.89	42.34	32.61	6.05

## MEAN MONTHLY DEPOSITS FOR 1946.

TONS PER SQUARE MILE.

Station	Undissolved Matter				Sulphate as SD4"	Chlorine as Cl'	Lime as Ca**
	Total Solids	Soluble in CS <sub>2</sub> (Tarry Matter)	Insoluble in CS <sub>2</sub> (Combustible Matter)	Ash			
North	13.14	.34	1.70	2.62	3.01	2.03	.69
Central	21.33	.44	3.33	6.57	3.53	2.72	.05

## III.—FOOD.

## (A) MILK SUPPLY.

There is an average dairy cow population in Bradford of 4,040 animals, housed in 258 dairy farm. The amount of milk produced by these cows is estimated at 8,000 gallons per day, whilst about 9,837 gallons come into the city by train or road; the total amount of milk consumed in the city being about 18,445 gallons daily.

*Contagious Abortion.* No cases of Undulant Fever attributable to the consumption of milk were reported.

*Food and Drugs Act, 1938.*

*Biological Examination of Milk for Tuberculosis.* Seven Hundred and seventy-four samples were taken; these samples were unselected and 8 of them were reported positive for B. Tuberculosis.

One hundred and thirteen herds produce 4,950 gallons of Accredited Milk per day. Three licences to pasteurise milk were granted to firms in the city, and under these licences about 1,100 gallons of milk is pasteurised, 3,000 gallons heat treated and 3,714 sterilized daily.

## SUMMARY.

Number of city dairy farms ... ... ... ...	258
Average dairy cow population ... ... ... ...	4,040

*Milk and Dairies Order, 1926.* There are 457 cowsheds within the city, and much improvement has been effected within recent years in their structure and equipment, and farmers now realise that the production of a consistently clean milk is, with care and method, comparatively easy. The improvement in cowsheds carried out is shown in the following summary :—

## SUMMARY OF DEFECTS REMEDIED, 1945-1946.

	1945	1946
Floors ... ... ... ...	6	8
Light and ventilation ... ... ... ...	5	4
Drainage ... ... ... ...	3	2
Milk-rooms provided ... ... ... ...	10	8
Milk-rooms altered ... ... ... ...	2	—
General repairs ... ... ... ...	6	16
Rooms added for sterilization purposes ...	17	5
Cowshed roofs repaired ... ... ... —	—	—
Cowsheds reconstructed ... ... ... 11	3	

Total number of visits to farms was 616.

There were at the end of the year 331 vendors of milk registered and residing within the city. These may be classified as follows :—

Cowkeepers and retailers ...	...	...	...	...	...	149
Retailers only (in street or from their homes) ...	...	...	...	...	...	)
Milkshops (including dairies, confectioners, small grocers and other shops) ...	...	...	...	...	...	195
Shops where milk is sold in sealed bottles only	...	...	...	...	...	828

The number of visits made to these premises was 247, and generally the premises were found to be in a satisfactory state.

In addition to these 331 vendors residing within the city, 55 dairy-men came into the city from surrounding districts to sell milk by retail.

During the year 13 new milk purveyors were registered.

*Chemical Examination of Milk.* Five hundred and sixty-nine samples were analysed. The results show that 11 of the samples gave an analysis under 3·0% of fat, and 337 over 3·5% of fat; while 111 of these samples gave an analysis under 8·5% of non-fatty solids. The total below both 3·0% of fat or 8·5% of non-fatty solids was four.

*Bacteriological Examination of Milk.* Reference to the Report of the City Bacteriologist will give the number of the samples examined and further details.

## RESULTS OF MILK ANALYSIS, 1946.

(B) THE FOOD AND DRUGS ACT 1938, AND THE PUBLIC  
HEALTH (PRESERVATIVES ETC. IN FOOD) REGU-  
LATIONS.

The number of samples of food and drugs taken under these Acts and submitted to the Public Analyst for analysis by the sampling officer was 966. Of these 922 were certified as genuine, and 44 as adulterated or doubtful.

The adulterations were small, and the vendors were cautioned.

TABLE SHOWING NUMBER OF SAMPLES PROCURED AND EXAMINED  
DURING 1946.

Nature of Sample	Number Submitted	Statutory Sample		Informal Sample	
		Genuine	Adulterated	Genuine	Adulterated
Apple Cider .. .	1	—	1	—	—
Appleade .. .	2	2	—	—	—
Aerated Water .. .	5	—	—	4	1
Almond Flavouring .. .	3	—	—	3	—
Almond Essence .. .	1	—	—	1	—
Aspirin Tablets .. .	6	—	—	6	—
Butter .. .	9	—	—	9	—
Bacon .. .	1	—	—	1	—
Barlova .. .	1	—	—	1	—
Beef and Vegetable Extract .. .	2	—	—	2	—
Borax .. .	2	—	—	2	—
Boric Acid Ointment .. .	1	—	—	1	—
Barley .. .	4	—	—	4	—
Boracic Ointment .. .	3	—	—	3	—
Bile and Liver Pills .. .	1	—	—	1	—
Bicarbonate of Soda .. .	1	—	—	1	—
Beef Cubes .. .	1	—	—	1	—
Barley Flakes .. .	1	—	—	1	—
Barley Crystals .. .	1	—	—	1	—
Baking Powder .. .	2	—	—	1	1
Blood and Stomach Pills .. .	1	—	—	1	—
Bile Ovals.. .	1	—	—	1	—
Betalax .. .	1	—	—	1	—
Back and Kidney Pills .. .	1	—	—	1	—
Bronchial Tablets .. .	2	—	—	2	—
Bismuthated Magnesia .. .	1	—	—	1	—
Black Pudding .. .	2	—	—	2	—
Bismeal .. .	1	—	—	1	—
Bloater Paste .. .	1	—	—	1	—
Bisto .. .	1	—	—	1	—
Beechams Powders .. .	1	—	—	1	—
Cider .. .	1	—	—	—	1
Cheese .. .	7	—	—	7	—
Chocolate Cup .. .	1	—	—	1	—
Totals (carried forward) .. .	70	2	1	64	3

TABLE SHOWING NUMBER OF SAMPLES PROCURED AND EXAMINED DURING 1946.

Nature of Sample	Number Submitted	Statutory Sample		Informal Sample	
		Genuine	Adulterated	Genuine	Adulterated
Totals (brought forward) ..	70	2	1	64	3
Cayenne Pepper ..	1	—	—	1	—
Cinnamon Powder ..	1	—	—	1	—
Compound Lard ..	1	—	—	1	—
Corned Beef ..	1	—	—	1	—
Concentrated Solution Essence, Orange Flavour ..	1	—	—	1	—
Custard Powder ..	1	—	—	1	—
Culinary Vanilla Flavour ..	1	—	—	1	—
Cooking Fat ..	4	—	—	4	—
Chest and Lung Mixture ..	1	—	—	1	—
Composition Essence ..	1	—	—	1	—
Cough Cure ..	1	—	—	1	—
Camphorated Oil ..	1	—	—	1	—
Cream of Tartar ..	2	—	—	2	—
Cascara Sagrada ..	1	—	—	1	—
Celery Salt ..	1	—	—	1	—
Chop Sauce ..	2	—	—	2	—
Curry Paste ..	1	—	—	1	—
Custard Flavour ..	1	—	—	1	—
Cocoa ..	2	—	—	2	—
Coffee ..	1	—	—	1	—
Castor Oil ..	3	—	—	3	—
Cascara Tablets ..	1	—	—	1	—
Chocolate Spread ..	1	—	—	1	—
Cake Decorations ..	1	—	—	1	—
Cochineal Synthetic Colour ..	1	—	—	1	—
Cough Mixture ..	1	—	—	1	—
Composition Essence ..	1	—	—	1	—
Cod Liver Oil ..	7	—	—	7	—
Digestive Tablets ..	1	—	—	1	—
Dates ..	1	—	—	1	—
Dried Milk ..	2	—	—	2	—
Digestive Mints ..	1	—	—	1	—
Dried Peas ..	1	—	—	1	—
Dandelion and Burdock ..	1	—	—	1	—
Daisy Headache Powders ..	1	—	—	1	—
Egg Substitute ..	2	—	—	1	1
Emulsified Peppermint Flavour ..	1	—	—	1	—
Epsom Salts ..	3	—	—	3	—
Evaporated Milk ..	1	—	—	1	—
Flavouring Essences ..	3	—	—	3	—
Fish Paste ..	7	—	—	7	—
Fullers Earth ..	2	—	—	2	—
Fennings Little Healers ..	1	—	—	1	—
Fennings Ointment ..	1	—	—	1	—
Fruit Cup ..	2	1	—	1	—
Friars Balsam ..	1	—	—	1	—
Totals (carried forward) ..	144	3	1	136	4

TABLE SHOWING NUMBER OF SAMPLES PROCURED AND EXAMINED  
DURING 1946.

Nature of Sample	Number Submitted	Statutory Sample		Informal Sample	
		Genuine	Adult-erated	Genuine	Adult-erated
Totals (brought forward) ..	144	3	1	136	4
Fish Cakes .. ..	1	—	—	1	—
Food Flavour Powder .. ..	1	—	—	1	—
Frutella Sauce .. ..	1	—	—	1	—
Gelatine .. .. ..	2	—	—	1	1
Gravy Salt .. .. ..	3	—	—	3	—
Ground Nutmeg .. .. ..	2	—	—	2	—
Ground Ginger .. .. ..	6	—	—	6	—
Ground Cinnamon .. .. ..	1	—	—	1	—
Ground Mixed Spice .. .. ..	1	—	—	1	—
Glycerine Substitute .. .. ..	1	—	—	—	1
Glycerine, Lemon and Ipec Mixture.. .. ..	1	—	—	1	—
Glycerine, Lemon and Ipec Balsam .. .. ..	1	—	—	1	—
Ground Borax .. .. ..	1	—	—	1	—
Glycerine B.P. .. .. ..	1	—	—	1	—
Green Pea Soup .. .. ..	3	—	—	3	—
Gelatine Powder .. .. ..	1	—	—	1	—
Ground Almond Substitute .. .. ..	1	—	—	1	—
Ground Black Pepper .. .. ..	2	—	—	2	—
Ground Nutmeg .. .. ..	2	—	—	2	—
Golden Raising Flour .. .. ..	1	—	—	1	—
Glycerine .. .. ..	2	—	—	2	—
Gravy Powder .. .. ..	1	—	—	1	—
Horseradish Salad Dressing .. .. ..	1	—	—	—	1
Harrogate Health Salts .. .. ..	1	—	—	—	1
Headache Powders .. .. ..	1	—	—	1	—
Head and Nerve Powders .. .. ..	1	—	—	1	—
Indigestion Herbs .. .. ..	1	—	—	1	—
Iodised Throat Tablets .. .. ..	1	—	—	1	—
Indian Brandee .. .. ..	1	—	—	1	—
Ice Cream.. .. ..	1	—	—	1	—
Ivelcon .. .. ..	1	—	—	1	—
Iodine .. .. ..	2	—	—	2	—
Jessops Lactic Barley Malt .. .. ..	1	—	—	1	—
Junket Powders .. .. ..	3	—	—	3	—
Joint and Muscle Pills .. .. ..	1	—	—	1	—
Jam .. .. ..	7	—	—	7	—
Koray .. .. ..	2	—	—	2	—
Kidney Pills .. .. ..	1	—	—	1	—
Kidney and Bladder Pills .. .. ..	1	—	—	1	—
Lemonade.. .. ..	2	1	—	1	—
Lem-ex .. .. ..	1	—	—	1	—
Libbys Vegetables .. .. ..	1	—	—	1	—
Libbys Spinnach .. .. ..	1	—	—	1	—
Lard .. .. ..	9	—	—	9	—
Lemon Flavouring .. .. ..	2	—	—	2	—
Totals (carried forward) .. .. ..	223	4	1	210	8

TABLE SHOWING NUMBER OF SAMPLES PROCURED AND EXAMINED  
DURING 1946.

Nature of Sample	Number Submitted	Statutory Sample		Informal Sample	
		Genuine	Adult-erated	Genuine	Adult-erated
Totals (brought forward) . . . . .	223	4	1	210	8
Lemco . . . . .	1	—	—	1	—
Lemon Juice Substitute . . . . .	1	—	—	1	—
Lemon Essence . . . . .	1	—	—	1	—
Liver Pills . . . . .	1	—	—	1	—
Laxobac . . . . .	1	—	—	1	—
Lemonade Crystals . . . . .	1	—	—	1	—
Laxative from Figs . . . . .	2	—	—	2	—
Laxative Chocolate . . . . .	1	—	—	1	—
Laxative Chewing Gum . . . . .	1	—	—	1	—
Milk . . . . .	569	16	4	532	17
Meat Pie . . . . .	2	—	—	1	1
Margarine . . . . .	23	—	—	19	4
Mixed Spice . . . . .	3	—	—	3	—
Malt Vinegar . . . . .	4	—	—	4	—
Mixed Herbs . . . . .	2	—	—	2	—
Mint . . . . .	2	—	—	2	—
Marjoram . . . . .	1	—	—	—	1
Meat Paste . . . . .	1	—	—	1	—
Mel Rose Tablet . . . . .	1	—	—	1	—
Mock Turtle Soup . . . . .	1	—	—	1	—
Milk of Sulphur . . . . .	1	—	—	1	—
Malted Milk Tablets . . . . .	1	—	—	1	—
Mustard . . . . .	1	—	—	1	—
Marshalls' Flavouring Powder . . . . .	1	—	—	1	—
Nerve Pills . . . . .	1	—	—	1	—
Orange Crush . . . . .	1	—	—	—	1
Oatmeal . . . . .	3	—	—	3	—
Orange Powder . . . . .	1	—	—	1	—
One of 8 Liniment Oil . . . . .	1	—	—	1	—
Orangeade Essence . . . . .	1	—	—	1	—
Orange Flavouring . . . . .	2	—	—	2	—
Orange Juice . . . . .	8	—	—	8	—
Oil of Eucalyptus . . . . .	2	—	—	2	—
Potted Meat Paste . . . . .	2	—	—	—	2
Pea Flour . . . . .	1	—	—	1	—
Pepper . . . . .	3	—	—	3	—
Paxo Stuffing . . . . .	1	—	—	1	—
Propax . . . . .	1	—	—	1	—
Prue Petroleum Jelly . . . . .	1	—	—	1	—
Pearl Barley . . . . .	1	—	—	1	—
Pickling Spice . . . . .	1	—	—	1	—
Pepper . . . . .	1	—	—	1	—
Parsley . . . . .	4	—	—	2	2
Pickles . . . . .	1	—	—	1	—
Rubbed Parsley . . . . .	4	—	—	2	2
Red Colouring . . . . .	1	—	—	1	—
Rennies . . . . .	1	—	—	1	—
Totals (carried forward) . . . . .	889	20	5	826	38

TABLE SHOWING NUMBER OF SAMPLES PROCURED AND EXAMINED  
DURING 1946.

Nature of Sample	Number Submitted	Statutory Sample		Informal Sample	
		Genuine	Adult-erated	Genuine	Adult-erated
Totals (brought forward) ..	889	20	5	826	38
Rum Flavour .. .	1	—	—	1	—
Salmon Paste .. .	1	—	—	—	1
Sponge Pudding Mixture .. .	1	—	—	1	—
Sugar .. . .	11	—	—	11	—
Salmon and Anchovy Paste .. .	1	—	—	1	—
Sauce .. . .	2	—	—	2	—
Semolina .. . .	5	—	—	5	—
Soup .. . . .	10	—	—	10	—
Strawberry Flavouring Essence .. .	1	—	—	1	—
Sparkling Special Essence .. .	1	—	—	1	—
Skin Tablets .. . .	1	—	—	1	—
Saccharin Tablets .. . .	2	—	—	2	—
Smoked Roe Paste .. . .	1	—	—	1	—
Seidlitz Powder .. . .	1	—	—	1	—
Salt .. . . .	1	—	—	1	—
Soda Water .. . .	1	—	—	1	—
Stomach Tablets .. . .	1	—	—	1	—
Stomach Powder .. . .	1	—	—	1	—
Soda Mint Tablets .. . .	1	—	—	1	—
Torox Cubes .. . .	1	—	—	1	—
Tea .. . . .	10	—	—	10	—
Towns Water .. . .	1	—	—	1	—
Table Dessert .. . .	1	—	—	1	—
Tooth and Nerve Powders .. . .	2	—	—	2	—
Tincture of Iodine .. . .	1	—	—	1	—
Ten-in-One Rubbing Oil .. . .	1	—	—	1	—
Thyme .. . . .	1	—	—	1	—
Twinklettes .. . .	1	—	—	1	—
Table Creams .. . .	1	—	—	1	—
Throat Pastilles .. . .	1	—	—	1	—
Unidit .. . . .	1	—	—	1	—
Ulster Broth .. . .	1	—	—	1	—
Vanilla Flavour .. . .	2	—	—	2	—
Vapour Ointment .. . .	1	—	—	1	—
Whole Cloves .. . .	1	—	—	1	—
Wintergreen Ointment .. . .	1	—	—	1	—
Wintergreen Balm .. . .	1	—	—	1	—
Yorkshire Relish .. . .	1	—	—	1	—
Yorkshire Pudding Mixture .. . .	1	—	—	1	—
Yeast Tablets .. . .	1	—	—	1	—
Zam-buk .. . .	1	—	—	1	—
Totals .. . .	966	20	5	902	39

### (C) SLAUGHTERHOUSES AND MEAT INSPECTION.

The total number of animals slaughtered in Bradford was as follows :—

						Public Abattoir
Beasts	...	...	...	...	...	13,291
Sheep and Lambs	...	...	...	...	...	49,723
Calves	...	...	...	...	...	15,971
Pigs	...	...	...	...	...	745
						<hr/>
					Total	79,730
						<hr/>

The number of carcases and offals totally condemned were as follows :—

#### WHOLE CARCASES AND OFFAL CONDEMNED, 1946.

	Bulls	Cows	Bullocks	Heifers	Calves	Sheep	Pigs
Decomposition (general) ..	—	—	—	—	—	1	—
Dropsy (general) .. .	—	9	—	—	—	12	1
Emaciation (general pathological) .. .. .	—	8	—	—	1	20	—
Erysipelas (acute swine) ..	—	—	—	—	—	—	4
Fever (acute) .. .	—	2	—	—	—	—	—
Immaturity .. .	—	—	—	—	129	—	—
Jaundice .. .	—	—	—	—	37	—	1
Pyæmia .. .	—	6	—	—	9	1	—
Septicæmia .. .	—	3	—	—	—	—	1
Tuberculosis.. .	1	237	2	4	5	—	6
Miscellaneous .. .	—	27	—	—	48	39	3
<b>TOTALS .. .</b>	<b>1</b>	<b>295</b>	<b>2</b>	<b>4</b>	<b>229</b>	<b>73</b>	<b>15</b>

The condemnations of partial carcasses and organs are shown in the following table :—

#### PARTIAL CARCASSES AND ORGANS CONDEMNED, 1946.

	Partial Carcase	Lungs	Heart	Stomach and Intestine	Liver	Pluck	Udder	Head
Abscess . .	Beasts	14	1	3	9	784	—	12
	Sheep	2	—	—	2	4	21	1
	Calves	—	—	—	—	4	—	1
	Pigs	—	—	—	—	1	—	—
Inflammato- ry Conditions	Beasts	5	20	64	152	2329	—	213
	Sheep	1	—	—	7	38	1	1
	Calves	—	—	—	2	—	4	—
	Pigs	1	19	3	41	—	6	—
Parasitic Conditions	Beasts	1	542	6	42	2336	—	23
	Sheep	—	—	—	—	2562	45	—
	Calves	—	—	—	—	—	—	—
	Pigs	—	—	—	—	19	—	—
Tuber- culosis	Beasts	12	1229	39	728	842	—	63
	Sheep	—	—	—	—	—	—	—
	Calves	—	1	—	—	—	—	—
	Pigs	—	—	—	17	—	15	15
Miscell- aneous	Beasts	95	—	—	133	—	—	24
	Sheep	6	—	—	—	—	1	—
	Calves	—	—	—	—	—	—	—
	Pigs	6	—	—	—	—	—	—

*The Slaughter of Animals Act, 1933.* Sixty-nine licences have been granted to persons to act as slaughtermen.

The question of applying Sec. 1 of this Act to sheep, ewes, wethers, rams and lambs was reconsidered by the Council, but no resolution was passed.

#### (D) OTHER ARTICLES OF FOOD.

Supplies of fish, fruit and vegetables were regularly inspected throughout the year in the St. James's Wholesale Market, the wholesale fish warehouses and retail shops.

The following foods were found, after inspection, to be unfit for human consumption, and by arrangement with the Corporation Cleansing Department, such of the produce as was fit for the purpose, was converted into animal feeding stuffs :—

Tons. Cwts. Qrs. Lbs.

Apples	...	...	...	...	—	2	2	—
Beans	...	...	...	...	—	—	—	—
Cabbages	...	...	...	...	22	19	2	—
Carrots	...	...	...	...	2	2	—	—

				Tons.	Cwts.	Qrs.	Lb.
Cauliflowers	...	...	...	6	—	2	10
Celery	...	...	...	—	17	2	10
Cockles	...	...	...	1	3	—	24
Crabs and Lobsters	...	...	...	—	—	1	22
Dry Fish	...	...	...	2	—	3	—
Dried Fruit	...	...	...	—	—	—	—
Leeks	...	...	...	—	—	—	—
Lettuce	...	...	...	1	3	2	14
Mushrooms	...	...	...	—	—	1	14
Mussels	...	...	...	6	14	3	8
Mustard and Cress	...	...	...	—	—	2	1
Onions	...	...	...	6	14	2	20
Peas	...	...	...	3	18	1	26
Pears	...	...	...	—	2	—	16
Rabbits	...	...	...	—	6	2	12
Raddishes	...	...	...	—	2	—	10
Sprouts	...	...	...	—	—	—	—
Swedes	...	...	...	1	1	2	—
Watercress	...	...	...	—	—	—	—
Wet Fish	...	...	...	1	13	1	—
				Total	57	4	9

### TINNED GOODS

Meat	...	...	...	...	...	...	...	2,475
Fish	...	...	...	...	...	...	...	1,635
Milk	...	...	...	...	...	...	...	1,927
Vegetables	...	...	...	...	...	...	...	1,723
Soup	...	...	...	...	...	...	...	574
Jam	...	...	...	...	...	...	...	295
Fruit	...	...	...	...	...	...	...	188
Fat	...	...	...	...	...	...	...	2,236
Oats and Cereals	...	...	...	...	...	...	...	4,174
Bacon and Ham	...	...	...	...	...	...	...	206
Miscellaneous	...	...	...	...	...	...	...	939
				Total				16,372

The greater part of these goods was referred to the Salvage Division of the Ministry of Food for disposal.

ABSTRACT OF THE RESULTS OF THE BACTERIOLOGICAL EXAMINATION OF  
ICE CREAM.

Coliform Bacilli	Number of Samples	Colonies on Agar at 37° C. per 1 cc.				
		under 50,000	50,000 to 100,000	100,000 to 200,000	200,000 to 400,000	over 400,000
Absent in 1 cc. ....	8	6	1	—	—	1
Present in 1 cc. and absent in 0·1 cc. .... ....	10	5	—	—	3	2
Present in 0·1 cc. and absent in ·01 cc. .... ....	7	1	2	2	1	1
Present in ·01 cc. and absent in ·001 cc. .... ....	10	1	3	—	1	5
Present in ·001 cc. and absent in ·0001 cc. .... ....	3	2	—	—	—	1
Present in ·0001 cc. ....	19	1	2	—	2	14
Totals ... .... ....	57	16	8	2	7	24

*Fertilizers and Feeding Stuffs Act, 1926.*

Feeding Stuffs sampled	Fertilizers sampled
Eggemon .. .. .. .. 1	Superphosphate of Lime .. 3
National Cattle Food No. I .. 1	Bone Meal .. 1
	Hoof and Horn Meal .. 2
	Nitrate of Soda .. 1
	Muriate of Potash .. 2
	Nitro Chalk .. 1
	Sulphate of Aminonia .. 1
	Dried Blood .. 1
	Soluble Blood .. 1
	Basic Slag .. 2
	Potasic Flue .. 1
	Universal Fertiliser .. 1

The results of the analysis of the above samples showed that the constituents conformed with the particulars as set out in the Statutory Statement and were in accordance with the provisions of the Act, with the exception of 4 cases. The vendors were cautioned by letter.

*Merchandise Marks Act, 1926.* Attention has been given during the year to the requirements of the various Imported Goods Orders made under the above Act and considerable improvement is noticeable in regard to the necessary marking by retailers.

## (F) PHARMACY AND POISONS ACT, 1933.

### *Poisons Rules, 1935.*

The number of applications for entry on the List of the Local Authority under the above Act was 431. The following table sets out the number of persons entered according to the respective trades. Each of the premises were inspected when applications were received.

No. of Listed Sellers Part 2 of the above Act	Nursery-men	Hardware-Dealers	Herbalists	Hairdressers	Grocers
431	8	30	12	10	371

## IV.—PREVALENCE AND CONTROL OF DISEASE.

### (A) INFECTIOUS DISEASES.

The mortality rate in Bradford from enteric fever, smallpox, measles, scarlet fever, whooping cough, diphtheria, and diarrhoea and enteritis under 2 years, known for convenience as Zymotic diseases, in 1946 was 50, giving a mortality rate for this group of 0·17 per 1,000.

#### AVERAGE QUINQUENNIAL ZYMOTIC DEATH-RATES FROM 1891.

1891-95 ... 2·3	1911-15 ... 1·2	1931-35 ... 0·31
1896-1900 ... 2·0	1916-20 ... 0·4	1936-40 ... 0·27
1901-05 ... 1·7	1921-25 ... 0·5	1941-45 ... 0·18
1906-10 ... 1·3	1926-30 ... 0·5	1946 ... 0·17

The diseases to be notified in Bradford are smallpox, cholera, plague, diphtheria, membranous croup, erysipelas, scarlet fever, ophthalmia neonatorum, infective enteritis, acute poliomyelitis, cerebro-spinal fever, tuberculosis, acute polio-encephalitis, encephalitis lethargica, pemphigus neonatorum, pneumonia and influenzal pneumonia, malaria, dysentery, and the fevers known by any of the following names, typhus, typhoid, enteric, relapsing, continued or puerperal.

*Diphtheria.* Cases, 144; Deaths, 8; Fatality, per cent., 5·5.

MORTALITY RATES PER 1,000 IN PREVIOUS YEARS.

	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946
Bradford ..	0·17	0·08	0·04	0·03	0·03	0·03	0·07	0·06	0·08	0·02
England and Wales ..	0·07	0·07	0·05	1·16	1·25	0·05	0·03	0·02	0·02	—

The number of cases of Diphtheria in 1946 was less than that for 1945, and the fatality rate was less. The sickness rate per 1,000 was 0·5. The cases were fairly evenly distributed throughout the city, the greatest number occurring in the Exchange Ward, where 15 cases were notified, and in the North-East and Little Horton Wards, where 14 and 13 cases occurred respectively.

CASES OF DIPHTHERIA MONTH BY MONTH.

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Number of Cases...	22	20	14	18	13	10	3	6	10	10	7	5

The greatest incidence of the disease fell on children at five years of age, and the highest death-rate on those at five years.

CASES AND DEATHS ACCORDING TO AGE.

	Under 1 yr.	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-15	15-20	Over 20	Total
Cases ...	2	5	7	10	14	10	6	7	10	9	28	12	24	144
Deaths .	—	1	—	2	—	2	—	—	—	1	1	—	1	8
Fatality percent.	0·0	20·0	0·0	20·0	0·0	10·0	0·0	0·0	0·0	11·1	3·5	0·0	4·1	5·5

The number of cases removed to hospital was 142, or 98·6 per cent. of the cases.

Supplies of diphtheria prophylactic, anti-toxin and Schick test outfits for the use of practitioners in the city are supplied by the Health Department.

*Typhoid and Para-Typhoid Fevers.* Cases notified, 8; deaths nil. Fatality per cent., 0·0.

MORTALITY RATES PER 1,000 IN PREVIOUS YEARS.

	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946
Bradford ...	0·00	0·00	0·01	0·01	0·00	0·01	0·01	0·01	0·00	0·00
England and Wales	0·00	0·00	0·00	0·00	0·00	0·01	0·00	0·00	0·00	—

The sickness rate in Bradford was 0·00 per 1,000 of the population.

The number of cases removed to hospital was 8.

*Scarlet Fever.* Cases, 409; Deaths, 0; Fatality per cent., 0·00.

#### MORTALITY RATE PER 1,000 IN PREVIOUS YEARS.

	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946
Bradford . . .	0·00	0·01	0·01	0·00	0·00	0·00	0·01	0·00	0·00	0·00
England and Wales	0·01	0·01	0·01	0·00	0·00	0·00	0·00	0·00	0·00	—

The number of cases of Scarlet Fever notified in 1946 was 294 less than in 1945. The sickness rate per 1,000 was 1·4. The greatest number of cases occurred in North-East Ward, where 39 cases were notified, and in North Bierley East, and Heaton Wards, where 35, and 28 cases occurred respectively.

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Number of Cases..	33	59	37	31	48	38	21	23	29	22	37	31

The cases and deaths classified according to age are seen in the following table:—

#### CASES AND DEATHS ACCORDING TO AGE.

	Under 1 year	1-5 years	5-15 years	15-25 years	25-45 years	45-65 years	Over 65 years	Total
Cases.. . .	6	137	223	23	14	5	1	409
Deaths .. .	—	—	—	—	—	—	—	—
Fatality per cent. . .	—	—	—	—	—	—	—	—

The number of cases removed to hospital was 367, or 89·7 per cent. of the cases. The Dick test is employed only to a very small extent in the city.

*Small-pox.* No case of Small-pox occurred in the city in 1946.

The following Table gives the vaccination returns in Bradford since 1925.

### VACCINATION STATISTICS.

Year	1 Births	2 Vaccin- ated	3 Insus- ceptible	4 Dead	5 Con- Objector	6 Post- poned	7 Removed	8 Un- accounted	Percent- age not Vaccinated including Columns 5, 6, 7, 8
1925	4,095	1,184	15	265	1,968	101	310	252	64·2
1926	3,892	1,325	32	271	1,727	76	244	108	55·9
1927	3,584	1,228	16	223	1,700	61	231	125	59·1
1928	3,707	1,147	12	208	1,930	32	243	135	63·1
*1929	4,495	1,119	35	233	2,599	67	240	202	69·1
1930	4,479	1,070	8	246	2,676	55	255	169	70·4
1931	4,168	947	19	240	2,510	46	266	140	71·1
1932	4,167	846	15	259	2,601	55	263	128	73·1
1933	4,034	804	6	187	2,581	19	349	88	75·3
1934	4,156	779	4	189	2,689	25	321	149	76·6
1935	4,107	804	5	198	2,714	25	225	136	75·5
1936	4,036	733	4	226	2,695	27	250	101	76·1
1937	4,181	708	3	191	2,775	33	225	246	78·4
1938	3,939	634	9	172	2,718	34	243	129	83·8
1939	3,749	404	5	160	2,568	17	246	349	84·8
1940	3,826	462	7	208	2,373	44	279	453	82·3
1941	3,817	657	7	179	2,348	25	374	227	77·9
1942	4,075	768	6	171	2,527	33	379	192	76·8
1943	3,890	693	6	140	2,461	31	373	186	75·6
1944	4,268	781	4	192	2,521	35	480	253	77·0
1945	4,013	671	2	172	2,371	7	414	376	83·2

\*The figures for that part of Bradford included in the old North Bierley Union are not available for those years prior to 1929.

## DEATHS IN EACH WARD FROM DIARRHOEAL DISEASES IN 1946.

Ward	Certified as Infective			Not Certified as Infective			Total Deaths from Diarrhoeal Diseases		
	Under 2 yrs.	Others	Total	Under 2 yrs.	Others	Total	Under 2 yrs.	Others	Total
Allerton ..	—	—	—	1	—	1	1	—	1
Bolton ..	—	—	—	2	—	2	2	—	2
Bradford Moor	—	1	1	—	—	—	—	1	1
Clayton ..	—	—	—	—	—	—	—	—	—
East Bowling	2	—	2	—	—	—	2	—	2
Eccleshill ..	1	—	1	1	—	1	2	—	2
Exchange ..	3	—	3	1	1	2	4	1	5
Great Horton	—	1	1	—	—	—	—	1	1
Heaton ..	1	—	1	—	—	—	1	—	1
Idle ..	—	—	—	—	—	—	—	—	—
Listerhills ..	—	—	—	—	—	—	—	—	—
Little Horton	1	1	2	1	—	1	2	1	3
Manningham	—	—	—	—	—	—	—	—	—
North East ..	4	—	4	1	2	3	5	2	7
North Bierley East ..	—	1	1	—	1	1	—	2	2
North Bierley West ..	1	—	1	—	—	—	1	—	1
South ..	3	—	3	1	—	1	4	—	4
Thornton ..	—	1	1	—	—	—	—	1	1
Tong ..	—	—	—	1	—	1	1	—	1
West Bowling	2	—	2	—	—	—	2	—	2
City ..	18	5	23	9	4	13	27	9	36

Twenty-five, or 69·4 per cent. of the total deaths, occurred under one year of age.

#### DEATHS AT VARIOUS AGE PERIODS.

	Months				Total under One Year					Years				65 and over
	0-3	3-6	6-12	0-1	1-2	2-5	5-15	15-25	25-45	45-65	65 and over	65 and over	65 and over	
Age Periods ..	0	3	6	12	0	1	2	5	15	25	45	65	and over	
Deaths ..	10	8	7	25	2	1	—	—	—	1	2	5		

#### DEATHS OCCURRING MONTH BY MONTH.

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Number of Deaths	1	3	3	5	3	1	3	2	3	4	4	4	36

The number of notifications of cases of zymotic enteritis received in 1946 was 17.

*Puerperal Pyrexia.* Cases, 25; Deaths, 1; Fatality per cent., 4·0.

#### RECORD OF PREVIOUS YEARS.

	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946
Cases.. ..	62	57	69	82	41	30	19	24	22	25
Deaths .. ..	4	2	5	4	6	4	4	3	3	1
Fatality per cent ..	6·5	3·5	7·2	4·9	14·6	13·3	21·0	12·5	13·6	4·0
Number of live births to each death ..	1002	1950	722	921	591	991	1039	1548	1378	5404

*Measles and German Measles.* Cases notified, 292; Deaths, 0; Mortality per 1,000, 0·00.

*Whooping Cough.* Cases notified, 942; Deaths, 6; Mortality per 1,000, 0·02.

*Erysipelas.* Cases, 95; Deaths, 4; Fatality per cent., 4·2.

## RECORD OF PREVIOUS YEARS.

		1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946
Cases .. ..		176	144	168	173	147	138	121	123	115	90	95
Deaths .. ..		9	5	3	3	2	4	4	1	2	1	4
Fatality per cent. ..		5·1	3·5	1·8	1·7	1·3	1·9	3·3	0·8	1·7	1·1	4·2

*Influenza.* Deaths, 41; Mortality rate per 1,000, 0·14.

## RECORD OF PREVIOUS YEARS.

		1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946
Deaths .. ..		56	129	25	47	62	64	29	115	29	38	41

## (B) TUBERCULOSIS.

The number of deaths from all forms of tuberculosis in 1946 was 150, giving a mortality rate of 0·53 per 1,000.

### RECORD OF PREVIOUS YEARS.

	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946
Deaths .. .	224	184	166	178	178	151	167	142	149	150

### MORTALITY RATE PER 1,000 IN PREVIOUS YEARS.

	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946
Bradford ..	0·77	0·64	0·58	0·65	0·66	0·57	0·64	0·54	0·56	0·53
England & Wales	0·70	0·63	0·62	0·69	0·72	0·65	0·66	0·62	0·63	—

During the past thirty years there has been a very great reduction in the death-rate from all forms of tuberculosis; this is well seen in the following Table, which shows the average mortality rate per 1,000 for the five-yearly periods 1921-25 being 150 per cent. above that of last year.

### AVERAGE MORTALITY RATE PER 1,000 FROM TUBERCULOSIS IN BRADFORD FOR PERIODS OF FIVE YEARS FROM 1921.

Periods	1921-1925	1926-1930	1931-1935	1936-1940	1941-1945	1946
Pulmonary .. .	0·84	0·81	0·72	0·55	0·66	0·46
Other Forms .. .	0·21	0·17	0·13	0·11	0·13	0·07
All Forms .. .	1·05	0·98	0·85	0·66	0·79	0·53

*Public Health Act, 1936, Section 172.* No action was taken under this section during the year.

## NEW CASES AND MORTALITY DURING 1946.

Age Periods	NEW CASES				DEATHS			
	Pulmonary		Non-Pulmonary		Pulmonary		Non-Pulmonary	
	M.	F.	M.	F.	M.	F.	M.	F.
0 to 1 ... ...	—	—	—	—	—	—	—	—
1 to 5 ... ...	—	—	4	5	1	—	—	3
5 to 10 ... ...	4	—	7	4	—	—	—	—
10 to 15 ... ...	5	1	6	—	—	1	—	2
15 to 20 ... ...	18	8	9	2	1	3	1	2
20 to 25 ... ...	26	3	3	4	2	6	—	1
25 to 35 ... ...	16	11	4	3	8	10	3	2
35 to 45 ... ...	24	7	3	—	23	8	2	1
45 to 55 ... ...	16	7	—	1	22	7	—	1
55 to 65 ... ...	16	5	—	—	16	4	1	—
65 and upwards	3	—	—	—	16	2	—	1
Totals ...	128	42	36	19	89	41	7	13

Of the deaths occurring from all forms of tuberculosis in 1946 26 per cent. were not notified.

(A) Pulmonary Tuberculosis. Deaths, 130; Mortality rate per 1,000, 0·46.

## RECORD OF PREVIOUS YEARS.

Deaths ... ...	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946
	190	154	142	149	147	116	130	115	105	130
Deaths ... ...	190	154	142	149	147	116	130	115	105	130

## MORTALITY RATE PER 1,000 IN PREVIOUS YEARS.

Bradford ... ...	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946
	0·65	0·53	0·48	0·54	0·54	0·44	0·50	0·44	0·40	0·46
England & Wales	0·58	0·47	0·53	0·58	0·60	0·54	0·55	0·52	0·51	0·46

Considering the deaths in relation to sex the death-rate from pulmonary tuberculosis was in 1946 among males 0·70 per 1,000, and among females 0·26 per 1,000. The chart on page 50 shows the male and female death-rates from pulmonary tuberculosis for the past twenty-five years in Bradford and shows that the difference in the rates in the two sexes is maintained. The very low rate among females as compared with that among males is rather difficult to account for.

Of the deaths occurring in 1946, 21 per cent. were not notified. The notifications received numbered 186, of which 172 were notified for the first time. This is an increase in primary notifications over the previous year.

(B) *Other Forms of Tuberculosis.* Deaths, 20; Mortality rate per 1,000, 0·07.

#### RECORD OF PREVIOUS YEARS.

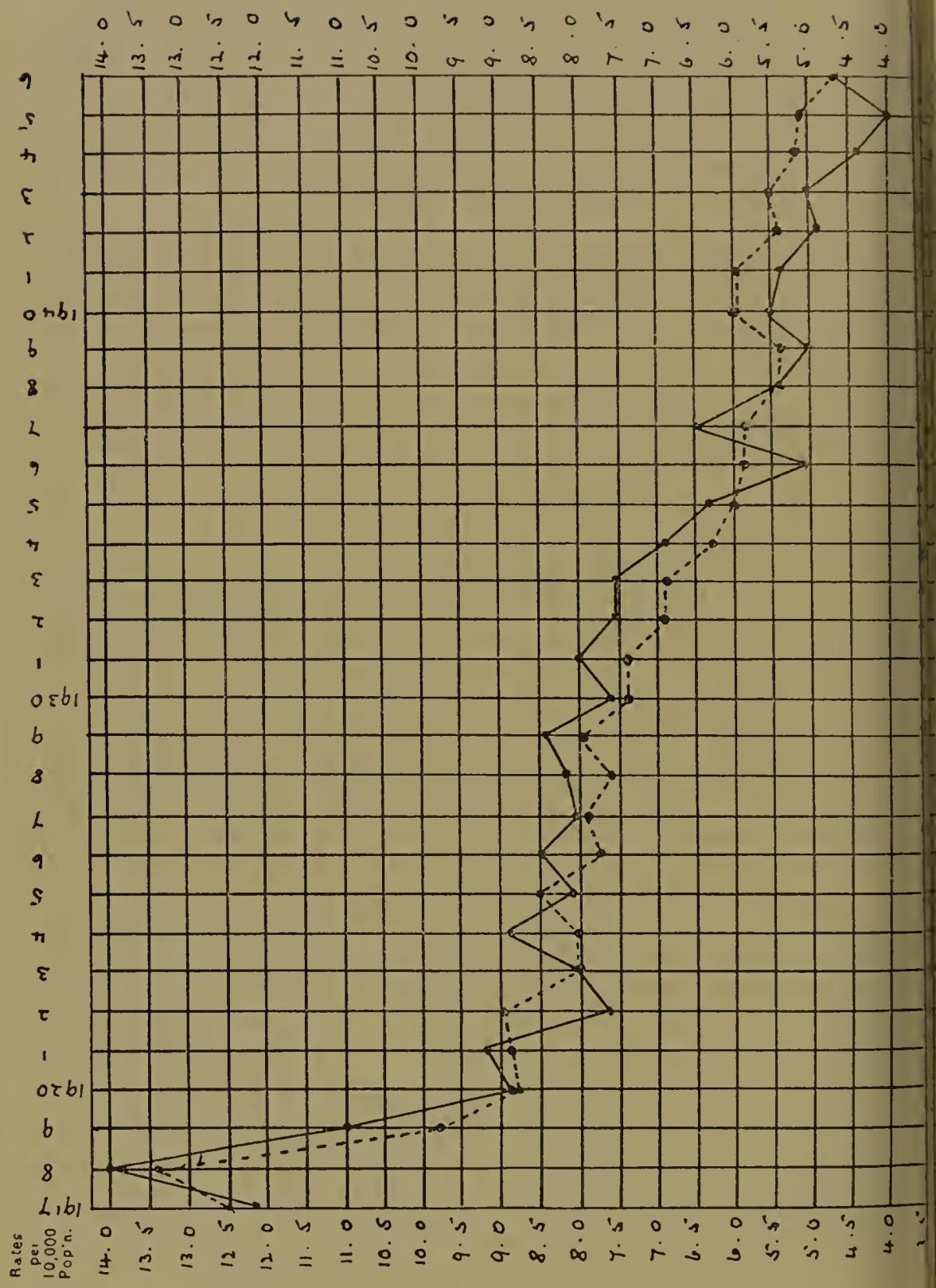
	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946
Deaths ... ...	34	30	24	29	31	35	37	27	44	20

#### MORTALITY RATE PER 1,000 IN PREVIOUS YEARS.

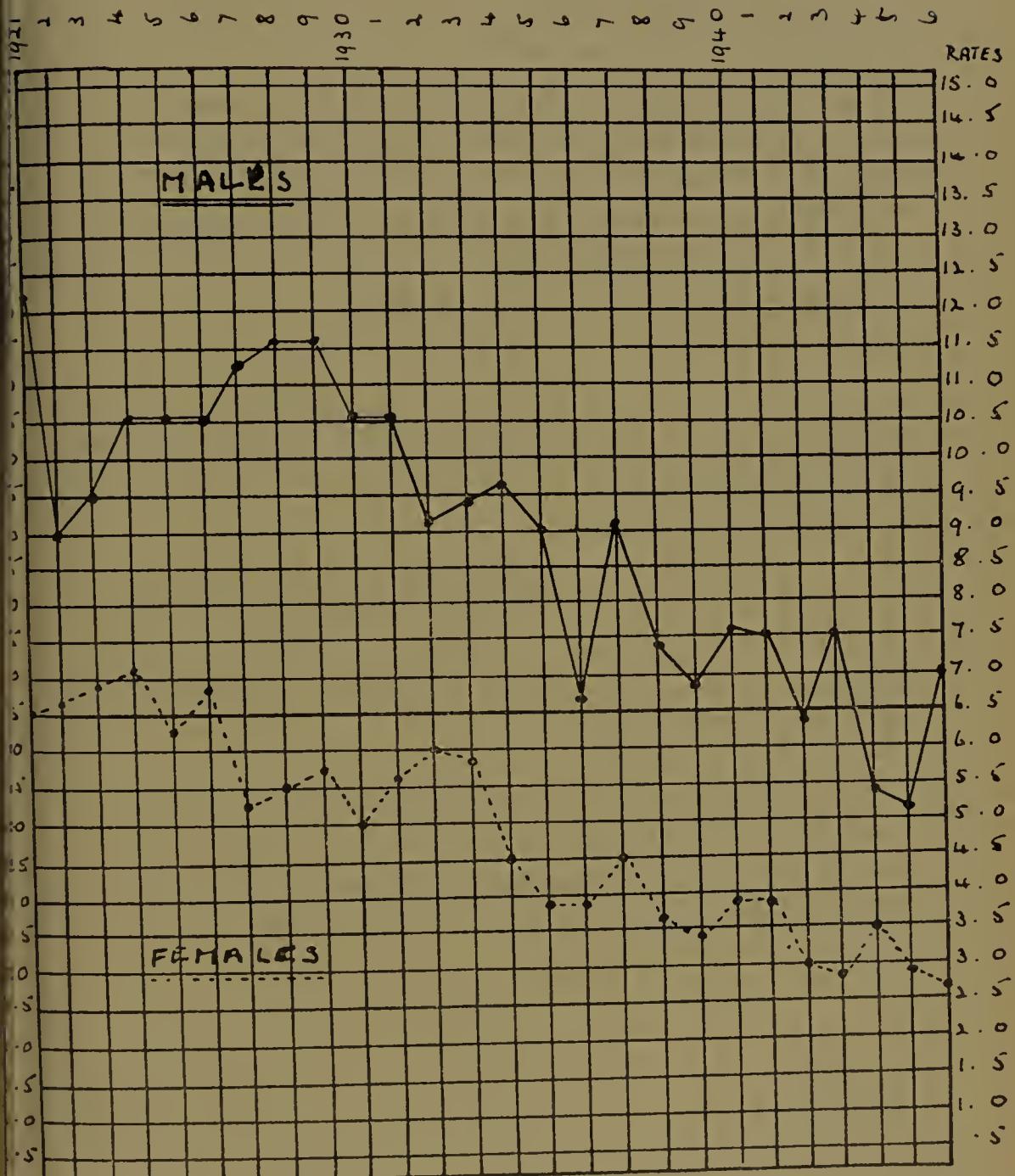
	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946
Bradford ... ...	0·12	0·11	0·08	0·10	0·12	0·13	0·14	0·10	0·16	0·07
England & Wales	0·11	0·12	0·09	0·11	0·12	0·11	0·11	0·10	0·12	—

During the past thirty years there has been a marked fall in the death-rate from non-pulmonary tuberculosis, the rate for last year being only 26 per cent. of that of the average for the years 1921-5. The fall may be associated with several causes, all of which have, no doubt, had an effect in bringing about this result. These may be shortly stated as follows :—(a) The improvement in the nutrition in infancy and childhood; (b) the increased purity of the milk supply and its greater freedom from tuberculous infection; and (c) the lessened incidence of pulmonary tuberculosis amongst women referred to above. The number of cases notified during the year of other forms of tuberculosis was 55. This is an increase of 10 notifications over that of the previous year.

DEATH-RATES FROM PULMONARY TUBERCULOSIS PER 10,000 OF THE  
POPULATION IN ENGLAND AND WALES AND BRADFORD, 1917-1946.



DEATH-RATES FROM PULMONARY TUBERCULOSIS PER 10,000 OF THE  
POPULATION IN BRADFORD ACCORDING TO SEX.



## ANTI-TUBERCULOSIS CENTRE.

Report by H. VALLOW, M.D., D.P.H., Tuberculosis Officer.

The Anti-Tuberculosis Centre, or Tuberculosis Dispensary, is open for general consultations eleven session per week, one being held in the evening for workers and another kept specially apart for children.

This Dispensary is the centre from which the measures for the prevention and treatment of tuberculosis, care and after-care are directed, working in close co-operation with the Central Health Department.

The number of attendances during the year 1946 was 4,839, of which 672 were new cases and 299 contacts. The cases diagnosed as definitely tuberculous are shown in the following tables :—

	Adults		Children		Total	
	Male	Female	Male	Female	Male	Female
<b>NEW CASES:—</b>						
(a) Pulmonary Tuberculosis ..	130	57	1	2	131	59
(b) Non-Pulmonary Tuberculosis ..	9	11	14	9	23	20
Total .. ..	139	68	15	11	154	79
 <b>CONTACTS:—</b>						
	Adults		Children		Total	
	Male	Female	Male	Female	Male	Female
(a) Pulmonary Tuberculosis ..	11	17	2	—	13	17
(b) Non-Pulmonary Tuberculosis ..	—	—	1	1	1	1
Total .. .. ..	11	17	3	1	14	18

The number of cases written off the Dispensary Register as Recovered is given in the following table :—

	Adults		Children		Total	
	Male	Female	Male	Female	Male	Female
<b>RECOVERED:—</b>						
(a) Pulmonary Cases .. ..	13	14	7	5	20	19
(b) Non-Pulmonary Cases .. ..	7	5	5	8	12	13
Total .. .. ..	20	19	12	13	32	32

The number of persons on the Dispensary Register on December 31st, 1946, is shown in the following table :—

Pulmonary Cases				Non-Pulmonary Cases				Total			
Adults		Children		Adults		Children		Adults		Children	
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
489	366	32	28	47	41	52	47	536	407	84	75

The Health Visitors have paid 2,533 visits to the homes for Dispensary purposes.

2,210 specimens of sputum have been examined and 1,227 X-ray examinations carried out.

Examinations are carried out for the Ministry of Pensions, National Service Medical Board, the Ministry of Labour and for the Asbestosis and Silicosis Scheme, under the Workmen's Compensation Acts.

#### *Maintenance Allowances (Memo 266/T.)*

The Government Scheme for Tuberculosis Authorities to grant allowances to certain classes of patients suffering from Pulmonary Tuberculosis and their dependants was put into operation in August, 1943.

The object of the arrangements authorised is to provide adequate maintenance for persons undergoing treatment and their dependants and to enable specific standing charges associated with the maintenance of the home to be met while the breadwinner is undergoing treatment.

The following figures show the number of applicants and average weekly payments :—

#### *Applications Granted :—*

(1) Standard Maintenance Allowances	...	...	...	115
(2) Discretionary Allowances	...	...	...	11
(3) Special Payments	...	...	...	25

*Average Weekly Payments :—*

		£ s. d.
(1)	Standard Maintenance Allowances ... ...	1 11 1
(2)	Discretionary Allowances ... ...	5 0
(3)	Special Payments (including travel vouchers)	5 6

The total net amount of allowance paid to patients or dependants during the year was :—

		£ s. d.
(1)	Standard Maintenance Allowances ...	5,093 10 4
(2)	Discretionary Allowances ... ...	66 4 3
(3)	Special Payments (including travel vouchers)	129 14 11

Applicants are interviewed and the assessments made by Miss Snowden, the Assessment Officer( who is responsible for this work, which is subject to Government audit.

Payments are made by the City Treasurer at the Town Hall.

*Thoracic Surgery.*

Thoracic Surgery, major and minor, continues to play an important part in the treatment of Pulmonary Tuberculosis. Mr. P. R. Allison, the visiting Consulting Chest Surgeon, has paid periodical visits to the Grassington Sanatorium. Arrangements have been made for the treatment of pulmonary cases at the Pinder Fields Hospital, Wakefield, and the Thoracic Surgeon has undertaken major thoracic surgery at this Institution.

Out-patients are seen at the Thoracic-Surgical Unit at the Leeds General Infirmary.

A very valuable feature is the regular clinic held at the Grassington Sanatorium at which all cases are considered by the Thoracic Surgeon,

the Tuberculosis Officer, and the Medical Superintendent before collapse therapy is decided upon.

The following up of these cases is undertaken at the Dispensary by the Tuberculosis Officer.

The amount of thoracic surgery done at our institutions and at the dispensary during the year is given below :—

Operation	No. of Cases
Artificial Pneumothorax	15
Artificial Pneumoperitoneum	8
Bronchoscopy	3
Thoracoscopy and Adhesiotomy	16
Phrenic Crush	16
Thoracoplasty	5
Artificial Pneumothorax Refills	503

#### *Mass Radiography.*

During the year the unit attached to the Leeds Mass Radiography Service visited Bradford and 7,805 cases were X-rayed, 4,976 males and 2,829 females.

Of these cases examined, Table A shows the total number of Chest Diseases and Circulatory Diseases detected, and Table B the type of Chest Diseases and Circulatory Diseases.

TABLE A

	Males	Females	Total
Chest Diseases .. ..	96	30	126
Circulatory Diseases .. ..	19	25	44
Total ..	115	55	170

TABLE B

			Males	Females	Total
<b>CHEST DISEASES:—</b>					
Active Pulmonary Tuberculosis	..	..	2	1	3
Chronic Pulmonary Tuberculosis	..	..	25	6	31
Inactive Pulmonary Tuberculosis	..	..	40	13	53
Chronic Disseminated Tuberculosis	..	..	4	4	8
Old Pleurisy	..	..	9	1	10
Bronchiectasis	..	..	6	—	6
Silicosis	..	..	4	—	4
Fibrosis of the Lung	..	..	—	1	1
Unresolved Pneumonia	..	..	2	1	3
Tumour and condition not yet diagnosed	..	..	3	—	3
Collapse of Middle Lobe	..	..	1	—	1
Encysted Mediastinal Effusion	..	..	—	1	1
Diaphragmatic Hernia	..	..	—	1	1
Eventratic Hernia	..	..	—	1	1
Totals	..	..	96	30	126
<b>CIRCULATORY DISEASES:—</b>					
Hypertension	..	..	6	10	16
Mitral Heart	..	..	10	12	22
Slight Cardiac Enlargement without symptoms	..	..	2	2	4
Aneurysm	..	..	—	1	1
Cardiac enlargement due to myxœdema	..	..	1	—	1
Totals	..	..	19	25	44

The following report from the Leeds Mass Radiography Service shows the number of cases X-rayed by the Unit during 1946 and compares the findings of the Bradford area with those of Leeds, the West Riding, Hull, Huddersfield, Wakefield, and the North Riding.

### CITY OF LEEDS MASS RADIOGRAPHY SERVICE.

#### CASES OF TUBERCULOSIS REFERRED TO DISPENSARY DURING 1946.

During 1946 the Unit X-rayed 45,378 persons from the areas of 7 main Authorities.

Individuals whose 35 mm. skiagrams were abnormal have been subjected to further investigations, including full size radiography, clinical examination, sputum testing and B.S.R. estimation.

Manifestations of tuberculosis were classified in the following way :—

- (a) Cases in which preliminary investigations revealed tuberculous lesions appearing to call for sanatorium treatment or dispensary supervision with limitation of personal activity. ("Active" cases).

- (b) Cases requiring dispensary observation, sometimes prolonged, for the assessment of possible active tuberculous lesions. ("Observation" cases).
- (c) Insignificant or post-primary calcification. ("Inactive cases).

Cases in the first two groups were referred to the local dispensaries for full investigation and follow-up. It is hoped eventually to discover the ultimate diagnosis in these cases. For the present, a table with graph, has been prepared to show the incidence of cases in the various areas. It will be realised that the sub-division into "Observation" and "Active" cases is somewhat arbitrary at this stage.

In the graph, the small figures above each column represent the total incidence of cases of tuberculosis, and the figures inside the columns represent the incidence of "Observation" and "Active" cases. The width of each column is proportional to the number of individuals X-rayed in each area.

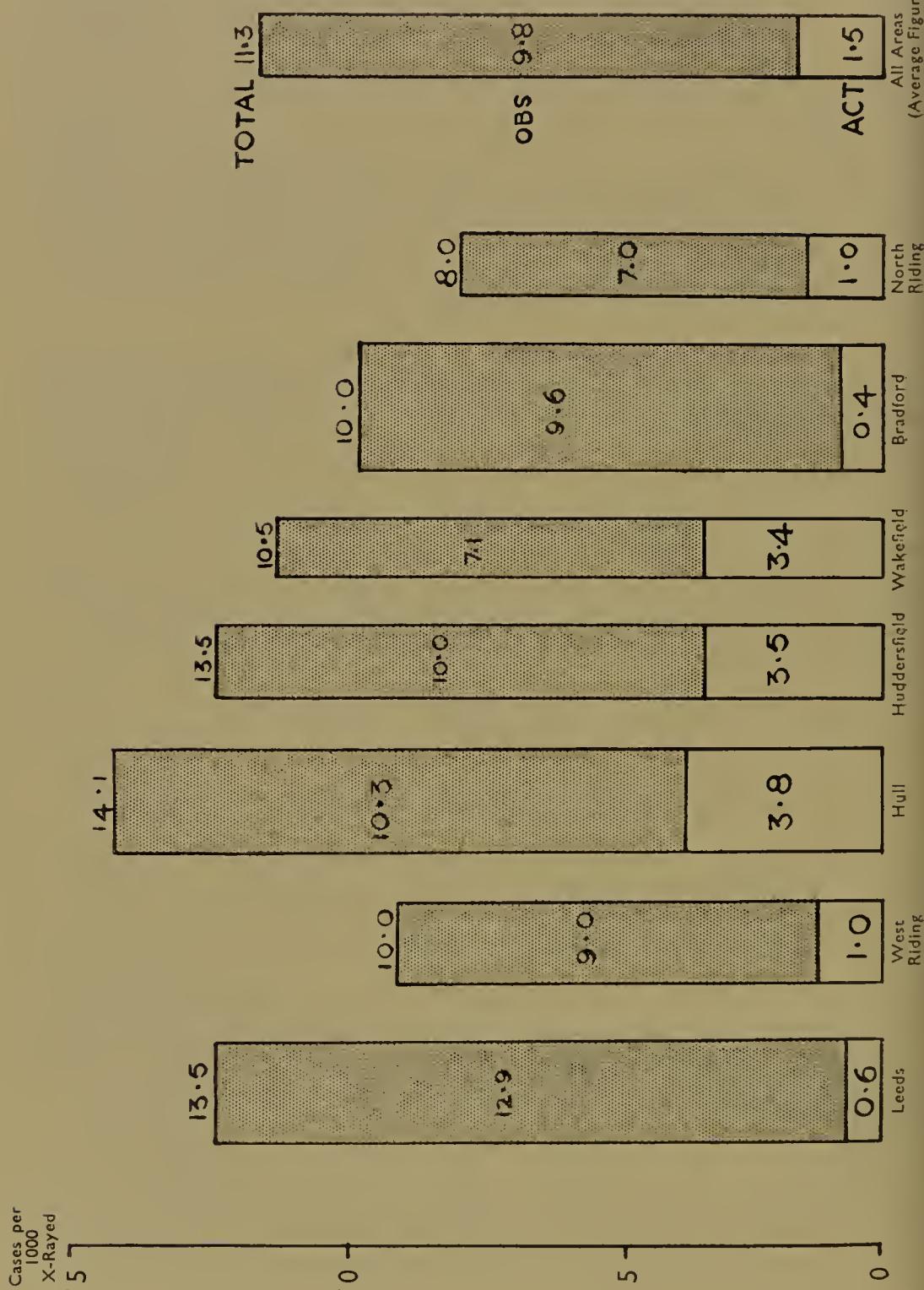
In addition to these cases of tuberculosis, a considerable number of persons suffering from various cardiac, gastric and non-tuberculosis pulmonary conditions have been referred to their Private Doctors.

TABLE TO SHOW INCIDENCE OF CASES REFERRED TO DISPENSARY.

	Number X-Rayed	Cases of T.B. referred to Dispensary per 1,000 X-Rayed			Total (with sampling error)
		"Observation"	"Active"		
Leeds . . . .	8161	12.9	0.6		13.5—2.6
West Riding . . . .	6279	9.0	1.0		10.0—2.5
Hull . . . .	10732	10.3	3.8		14.1—2.4
Huddersfield . . . .	4597	10.0	3.5		13.5—3.4
Wakefield . . . .	3775	7.1	3.4		10.5—3.3
Bradford . . . .	7805	9.6	0.4		10.0—2.3
North Riding . . . .	4029	7.0	1.0		8.0—2.8
Total . . . .	45,378	9.8	1.5		11.3—1.0

Graphical Presentation of Cases of Tuberculosis disclosed by Mass Radiography.

*Relative numbers referred to the Dispensaries in the various Areas visited.*



## GRASSINGTON SANATORIUM.

R. S. DONALDSON, M.D., D.P.H., MEDICAL SUPERINTENDENT.

The Institution provides accommodation for 152 patients, 52 beds for men, 52 for women, and 48 for children. The beds are intended for those case of pulmonary and non-pulmonary forms of tuberculosis in which there is reasonable prospect of arrest or considerable improvement.

There is also an Emergency Huttet Hospital, and during the year 12 Service cases were admitted to this hospital and were dealt with for Medical Board purposes.

## ADMISSIONS AND DISCHARGES, 1946.

	Remaining 31/12/45	Adults		Children		Total	
		M.	F.	M.	F.	M.	F.
Remaining 31/12/45	.. .. ..	45	43	11	6	56	49
Admitted..	.. .. ..	78	67	10	12	88	79
Discharged	.. .. ..	70	62	15	10	85	72
Died	.. .. ..	5	1	—	—	5	1
Remaining 31/12/46	.. .. ..	48	47	6	8	54	55

## ADMISSIONS.

	Pulmonary Cases	Adults		Children		Totals	
		M.	F.	M.	F.	M.	F.
Pulmonary Cases	.. .. ..	67	49	1	1	68	50
Non-Pulmonary Cases	.. .. ..	4	8	5	7	9	15
Observation Cases	.. .. ..	7	10	4	4	11	14

	Number of patient days	Adults		Children		Total	
		M.	F.	M.	F.	M.	F.
Average number of beds occupied	.. ..	18175	14901	5871	4326	43273	
Average number of beds occupied	.. ..	48·4	44·2	6·4	7·0	106·0	

Of the cases discharged, 3 men, 1 woman and 2 boys stayed under 1 month. The remainder were classified as follows :—

Amongst the adult males, 60 had well established pulmonary tuberculosis, the tubercle bacillus being found in 51, but not in 9, 6 had other forms of tubercle and 5 were either doubtfully tuberculous or had other diseases.

Amongst the adult females, 47 had well established pulmonary tuberculosis, the tubercle bacillus being found in 40, but not in 7, while 10 had other forms of tubercle, and 1 was either doubtfully tuberculous, or had other diseases.

During the year, 1 man and 4 women admitted for observation were discharged as definite cases of pulmonary tuberculosis.

Amongst the children discharged 4 boys and 4 girls had intrathoracic tubercle, 5 boys and 4 girls had other forms of tubercle, and 4 boys and 2 girls were either doubtfully tuberculous or had other diseases.

#### *Pulmonary Tuberculosis :—*

##### *Adults.*

	Males		Females	
	T.B. +	T.B. -	T.B. +	T.B. -
Average Age ... ... ...	29	23	24	23
Average stay in days ... ... ...	255	212	272	161
Average gain in weight ... ... ...	8·2 oz.	3·6 oz.	8·5 oz.	9·8 oz.

#### VARIATION IN WEIGHT ACCORDING TO STAGE OF DISEASE.

Weight	Stage I		Stage II		Stage III	
	M.	F.	M.	F.	M.	F.
Gained ... ... ... ... ...	—	—	14	16	23	22
Lost ... ... ... ... ...	1	—	4	—	5	6
Not weighed ... ... ... ...	—	—	1	—	12	3

## CAPACITY FOR WORK.

	T.B.+		T.B.-		Total	
	M.	F.	M.	F.	M.	F.
Fit for full work.. . . .	19	2	8	6	27	8
Not fit for full remunerative employment .. . . .	6	11	1	1	7	12
Not fit for work.. . . .	26	27	—	—	26	27

Table showing the results of observation of doubtfully tuberculous cases discharged during the year. (Stay of under one month not noted.)

Diagnosis on Discharge from Observation	For Pulmonary Tuberculosis				For Non-Pulmonary Tuberculosis				Totals			
	M	W	B	G	M	W	B	G	M	W	B	G
Tuberculous .. . .	1	4	4	4	—	—	—	—	1	4	4	4
Non-Tuberculous .. . .	5	—	2	—	—	—	—	1	5	—	2	1
Doubtful .. . .	—	1	1	1	—	—	—	—	—	1	1	1
Totals .. . .	6	5	7	5	—	—	—	1	6	5	7	6

## Children.

		Boys	Girls
Average Age .. . . .	... . . . .	9	8
Average stay in days .. . . .	... . . . .	413	605
Average gain in weight .. . . .	... . . . .	1-6-3	1-2-15

The results of treatment of the Children are shown in the following table. (Stay of under one month not noted.) :—

Result of treatment of Children	Quiescent		Improved		No material Improvement		Totals	
	B	G	B	G	B	G	B	G
(1) Intrathoracic Tuberclle .. . .	4	3	—	1	—	—	4	4
(2) Other forms of Tuberclle .. . .	5	2	1	2	—	—	6	4
(3) Doubtful and other diseases .. . .	3	1	—	1	—	—	3	2
Totals .. . . .	13	6	1	4	—	—	13	10

TABLE SHOWING RESULTS OF TREATMENT.  
ADULTS.

Stage	T.B. + Cases						T.B. — Cases						Total						Total						
	Quiescent			Improved			Little Improved or Worse			Died			Quiescent			Improved			Little Improved or Worse			Died			
	M.	F.		M.	F.		M.	F.	M.	M.	F.	M.	M.	F.	M.	M.	F.	M.	M.	F.	M.	M.	F.	M.	
I A.	..	3	2	3	5		1	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—
II A.	..	13	2	2	2		6	7	5	3	—	1	—	5	4	8	5	3	6	—	—	—	—	—	—
III A.	..	—	—	—	—		15	2	2	1	—	4	—	2	15	1	2	2	—	—	—	—	—	—	—
I B.	..	—	—	—	—		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
II B.	..	—	—	—	—		8	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
III B.	..	1	1	3	12		4	13	1	1	—	—	—	—	1	1	2	2	3	12	—	—	—	—	—
I C.	..	—	—	—	—		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
II C.	..	—	—	—	—		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
III C.	..	—	—	—	—		5	2	8	11	5	1	18	14	—	—	—	—	—	—	—	—	—	—	—
Total . .	17	3	21	25	8	11	5	1	51	40	9	6	—	1	—	—	—	—	9	7	26	9	21	26	8

NOTE ON CLASSIFICATION.—Pulmonary Tuberculosis cases in Adults are sub-divided into two classes:—(1) Tubercle Bacilli present in the sputum; (2) Tubercle Bacilli absent. Each of these classes is sub-divided according to the lesion in the lung and the constitutional disturbance. For the extent of the lesion a modified Turban-Gerhardt system is used. Stage 1 being a localised lesion involving if both lungs, not more than the extent of the lung above the clavicle in front, and above the spine of the scapula behind; whilst if only one lung is affected, a lesion extending not lower than the second rib in front and the spine of the scapula behind is indicated. Stage 2 indicates a slight lesion up to one lobe, or a severe lesion of half a lobe. Stage 3 includes all other cases. The letters A, B and C are used to denote constitutional disturbance. A denotes constitutional disturbance absent or slight; B, intermediate between A and C; C very severe constitutional disturbance. Constitutional disturbance is in each case estimated by a study of the general condition and state of nutrition, pulse, temperature and erythrocyte sedimentation rate.

*Non-Pulmonary Tuberculosis :—*

			Men	Women	Boys	Girls
Average Age	...	...	19	27	6	8
Average stay in days	...	...	307	176	359	173

The following table shows the results of treatment of non-pulmonary forms of tuberculosis :—

Location of Disease	Quiescent				Improved				Little Improved or Worse				Died				Totals			
	M	W	B	G	M	W	B	G	M	W	B	G	M	W	B	G	M	W	B	G
Spine .. ..	-	2	-	-	1	2	-	-	-	-	-	-	-	-	-	-	1	4	-	-
Bones and Joints ..	1	1	1	-	-	1	1	2	-	-	-	-	-	-	-	-	1	2	2	2
Abdomen .. ..	-	-	3	2	1	1	-	-	1	1	-	-	-	-	-	-	2	2	3	2
Other Organs .. ..	-	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	2	2	-	-
Peripheral Glands ..	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Totals ..	1	5	5	2	4	4	1	2	1	1	-	-	-	-	-	-	6	10	6	4

Summary of Special Treatment given and work done in the Laboratory, and X-Ray Department :

*Treatments.*

Artificial pneumothorax was performed successfully on 15 patients. Several other cases were attempted but were unsuccessful on account of adherent pleura.

8 cases had artificial pneumoperitoneum.

109 injections of gold were given, the preparation used being May and Baker's aqueous myocrisin.

The Thoracic Surgeon visited the Sanatorium for consultation on eight occasions during the year.

In addition to the pneumothorax work already noted the following operative work was carried out in 1946 :—

Operation								No. of Cases
Bronchoscopy	..	..	..	..	..	..	..	3
Thoracoscopy and Adhesiotomy	..	..	..	..	..	..	..	16
Phrenic Crush	..	..	..	..	..	..	..	15
Thoracoplasty	..	..	..	..	..	..	..	5

Some of the complications and associated conditions treated were :—

Appendicitis	...	...	...	...	...	...	1
Arthritis	...	...	...	...	...	...	2
Bronchitis	...	...	...	...	...	...	5
Cervical Adenitis	...	...	...	...	...	...	3
Diabetes Mellitus	...	...	...	...	...	...	1
Endocarditis	...	...	...	...	...	...	1
Haemoptysis	...	...	...	...	...	...	5
Haematuria	...	...	...	...	...	...	1
Ischio-rectal abscess	...	...	...	...	...	...	2
Otitis Media	...	...	...	...	...	...	2
Pleural Effusion	...	...	...	...	...	...	6

The Dental Surgeon visited the Sanatorium at intervals during the year when 154 teeth were extracted, 45 filled, 12 scaled and various other minor operations carried out.

#### Laboratory.

In all 2,303 specimens of sputum were examined. In 259 specimens tubercle bacilli were found on direct smear. In 186 specimens tubercle bacilli were found in the sputum after concentration when results had been negative on direct smear.

111 specimens of sputum were cultured and the tubercle bacillus recovered from 6 of these.

5 guinea pig inoculations for diagnostic purposes were carried out during the year.

Gastric lavage was carried out on 12 patients.

1,018 Erythrocyte sedimentation tests were performed.

*X-Rays.*

During the year 674 films of the chest were taken and many screen examinations made.

## BIERLEY HALL HOSPITAL.

					Men	Women	Total
Admissions ..	..	..	..	..	57	42	99
Pulmonary Cases ..	..	..	..	..	56	38	94
Non-Pulmonary Cases ..	..	..	..	..	—	2	2
Observation Cases ..	..	..	..	..	1	2	3
Discharges ..	..	..	..	..	34	24	58
Deaths ..	..	..	..	..	18	7	25
Number of Patient Days ..	..	..	..	..	7434	4130	11564
Average number of Beds occupied ..	..	..	..	..	20.3	11.3	31.6
Average stay in Hospital in days ..	..	..	..	..	130.4	98.3	116.3

There was a marked increase in the number of admissions as compared with 1945. The majority of cases admitted were of an advanced type and progress was consequently slow. Two Service and seven ex-Service cases were treated in the institution.

Several cases were admitted for preliminary treatment before proceeding to the Grassington Sanatorium. Eleven of those patients who improved sufficiently were transferred to Grassington for continuation of treatment. However, the majority of the beds were occupied by advanced chronic cases who required rest and general treatment or were removed to hospital to avoid infecting home contacts. Many of these patients were unsuitable for open-air treatment. Owing to the advanced nature of the disease, little, or no occupational therapy was possible.

The following table shows the condition on discharge of the 58 cases :—

							Men	Women
Much improved	...	...	...	...	...	...	6	6
Improved	...	...	...	...	...	...	6	7
Stationary	...	...	...	...	...	...	9	10
Worse	...	...	...	...	...	...	10	2
No evidence of Pulmonary Tuberculosis	...	...	...	...	...	...	1	1

### (C). VENEREAL DISEASES.

The Centre at the Municipal General Hospital is well equipped, and conveniently situated so as to serve the whole area. In the Municipal General Hospital itself beds are provided for indoor treatment of venereal disease in its various forms, and the provision made is adequate.

The number of new cases from the area of the City of Bradford and the attendances at the Venereal Centre during the last 20 years are shown in the following table :—

Year	Venereal Diseases		Non-Venereal Diseases		Attendances	
	Males	Females	Males	Females	Males	Females
1928	344	122	141	83	20,972	5,253
1929	308	145	156	116	17,955	4,654
1930	311	145	165	110	19,215	6,230
1931	236	97	127	73	16,738	4,333
1932	336	111	146	68	16,720	4,243
1933	390	315	35	22	21,991	4,921
1934	379	93	188	78	19,811	5,471
1935	360	129	156	55	17,817	5,672
1936	277	131	140	63	15,714	5,237
1937	302	99	119	67	16,358	5,829
1938	377	129	197	88	15,622	5,869
1939	330	127	200	69	10,408	3,906
1940	273	95	143	69	7,687	4,916
1941	405	109	148	113	7,376	4,278
1942	297	149	140	91	6,639	5,266
1943	269	185	216	190	7,525	6,171
1944	292	196	303	221	7,530	6,797
1945	340	304	259	238	10,064	10,472
1946	552	279	514	209	16,487	10,677

		Males	Females
1.	Number of persons dealt with at the Out-patient Clinic for the first time and found to be:—		
	Suffering from Syphilis .. .. .. .. ..	183	139
	Suffering from Soft Chancre .. .. .. .. ..	5	—
	Suffering from Gonorrhœa .. .. .. .. ..	369	117
	Not suffering from Venereal Disease .. .. .. .. ..	514	209
	Total .. .. .. .. ..	1071	465
2.	Number of persons discharged from the Out-patient Clinic after completion of treatment for:—		
	Syphilis .. .. .. .. ..	20	58
	Soft Chancre .. .. .. .. ..	6	—
	Gonorrhœa .. .. .. .. ..	215	41
	Total .. .. .. .. ..	241	99
3.	Number of persons who ceased to attend the Out-patient Clinic without completing treatment and who were suffering from:—		
	Syphilis .. .. .. .. ..	77	92
	Soft Chancre .. .. .. .. ..	—	—
	Gonorrhœa .. .. .. .. ..	5	9
	Total .. .. .. .. ..	82	101
4.	Total attendances of all persons at the Out-patient Clinic who were:—		
	Suffering from Syphilis .. .. .. .. ..	7469	6326
	Suffering from Soft Chancre .. .. .. .. ..	20	—
	Suffering from Gonorrhœa .. .. .. .. ..	7350	3994
	Not found to be suffering from Venereal Disease .. .. .. .. ..	1648	354
	Total .. .. .. .. ..	16,487	10,674
5.	Aggregate number of "In-patient days" of treatment given to persons suffering from:—		
	Syphilis .. .. .. .. ..	156	457
	Soft Chancre .. .. .. .. ..	—	—
	Gonorrhœa .. .. .. .. ..	67	73
	Not suffering from Venereal Disease .. .. .. .. ..	—	—
	Total .. .. .. .. ..	223	530
6.	Number of persons treated with Salvarsan Substitutes ..	440	429

Dose	Novarseno-billon	Sulphostab
.04 grm.	—	—
.05 "	85	—
.06 "	—	—
.10 "	44	33
.15 "	17	1
.20 "	—	2
.30 "	897	29
.45 "	2,280	47
.60 "	1,439	5
Total ..	4,762	117

Authorities responsible for patients:—

Area	New Cases	Number of Attendances at Out-patient Clinic	Aggregate number of In-patient Days	No. of doses of Salvarsan Substitutes used in Treatment Centre
Bradford ..	1,309	33,515	469	4,588
West Riding ..	342	4,070	227	898
Total .. ..	1,651	37,585	696	5,486

Pathological Examinations made in the Laboratory during the twelve months ending on the 31st December, 1946 :—

Nature of Test	For Treatment Centre	For Private Practitioners	For Hospitals and other Institutions
	No. of Tests	No. of Tests	No. of Tests
For detection of Spirochaetes	104	2	1
For detection of Gonococci	3,319	279	853
For Wassermann reaction ..	1,554	273	7,711
Kahn Tests .. .. ..	1,543	259	7,547
Other examinations.. ..	—	—	169
Totals ..	6,520	813	16,281

The number of doses of salvarsan supplied free to medical practitioners in Bradford by the Local Authority during 1946 was 50.

Towards the end of the year a microscope was installed at the Centre and the following pathological examinations were made at the clinic by the medical officer :—

Detection of Gonorrhoea	...	...	...	...	599
Detection of Spirochaetes	...	...	...	...	46

The war years were marked by a steady increase in the incidence of venereal disease. The end of hostilities in Europe led to increased leave facilities and the inception of large scale demobilisation and the unfortunate consequence of this was a further steep rise in the incidence of venereal diseases in 1946. This tended to push into greater prominence the social problems of defaulters and contacts. A Social Worker was appointed in 1945 and throughout 1946 her activities among the female patients played an increasingly prominent part in the clinic's services.

During the year the Ministry of Supply made available to venereal disease clinics large supplies of penicillin for clinical trials in the treatment of gonorrhoea and syphilis. The success of penicillin particularly in gonorrhoea has to a large extent enabled treatment to keep pace with the rising incidence.

The following tables showing figures for the past four years show the prevalence of venereal disease :—

#### NUMBERS.

	1943	1944	1945	1946
Ophthalmia neonatorum cases notified ..	20	13	15	36
Congenital syphilis deaths registered ..	—	—	—	—
Still Birth cases registered ..	188	178	177	157

#### PROPORTIONS PER 1,000 BIRTHS.

	1943	1944	1945	1946
Ophthalmia neonatorum cases notified ..	4.8	2.8	3.6	6.4
Congenital syphilis deaths registered ..	—	—	—	—
Still Birth cases registered ..	45.2	38.3	42.7	28.2
Illegitimate Births registered ..	78.6	84.1	108.5	83.6

## (D) OTHER DISEASES.

*Malignant Diseases.* Deaths, 646; Mortality rate per 1,000, 2.31.

## RECORD OF PREVIOUS YEARS.

	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946
Deaths . . .	540	523	514	540	564	594	612	608	562	646

## MORTALITY RATES PER 1,000 FROM MALIGNANT DISEASES SINCE 1937.

	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946
Bradford . . .	1.87	1.81	1.81	1.99	2.09	2.24	2.31	2.31	2.13	2.31
England and Wales	1.63	1.67	1.67	1.72	1.78	1.83	1.90	1.90	—	—

A slight decrease in the number of deaths took place last year both among males and females.

## MALIGNANT DISEASE IN BRADFORD ACCORDING TO SEX AND SITE.

## CRUDE ANNUAL DEATH RATES PER 1,000

Situation of Disease	1945			1946		
	Males	Females	Persons	Males	Females	Persons
Buccal Cavity and Pharynx	0.09	0.06	0.07	0.07	0.02	0.09
Digestive organs and Peritoneum . . .	1.19	0.99	1.08	0.64	0.61	1.26
Respiratory organs . . .	0.49	0.07	0.26	0.22	0.08	0.29
Uterus . . . .	—	0.31	0.18	—	0.18	0.18
Other female genital organs	—	0.22	0.13	—	0.10	0.10
Breast . . . .	—	0.46	0.22	—	0.19	0.19
Male genito-urinary organs	0.19	—	0.10	0.09	—	0.09
Skin . . . .	0.01	—	0.01	0.01	0.01	0.02
Other or unspecified organs	0.11	0.06	0.06	0.03	0.04	0.08
Total	1.98	2.17	2.13	1.06	1.25	2.31

*Respiratory Diseases.* Deaths, 409; Mortality rate per 1,000, 1.47.

## DEATHS FROM BRONCHITIS AND PNEUMONIA IN PREVIOUS YEARS.

	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	
Bronchitis	..	160	100	139	474	323	264	298	232	265	237
Pneumonia	..	240	167	186	213	152	175	205	181	175	172

### AGE INCIDENCE OF DEATHS.

Age Periods	1 year	1-2	2-5	5-15	15-25	25-45	45-65	65 upwards
Bronchitis . .	4	—	—	—	—	3	39	191
Pneumonia	38	3	1	2	2	12	34	80

*Rheumatic Fever and Organic Heart Disease.* Deaths, 1,419;  
Mortality rate per 1,000, 5.08.

The deaths from rheumatic fever numbered 4 and from organic heart disease 1,415.

Deaths from organic heart disease in 1946 occurred in 724 cases amongst males, and in 691 cases amongst females. This gives a death-rate of 5.51 per 1,000 amongst males, and 4.56 per 1,000 amongst females.

DEATHS FROM ORGANIC HEART DISEASE, 1946, ACCORDING TO  
SEX AND AGE.

Sex		Under 5 yrs.	5-15	15-25	25-45	45-65	Over 65 yrs.	Total
Males . .	..	—	—	—	18	209	497	724
Females . .	..	—	1	4	11	122	553	691
Total . .	..	—	1	4	29	331	1,050	1,415

*Cerebro-Spinal Fever.* There were 16 cases notified, and 4 deaths in 1946, as against 24 cases with 1 death in the previous year.

*Encephalitis-Lethargica.* There were 120 cases notified, and 5 deaths, as against 2 cases, with 1 death, in the previous year.

*Acute Polioencephalitis.* There was 1 case notified during the year, and no deaths.

*Deaths from Violence.* Deaths, 128; Mortality rate per 1,000, 0·45.

#### RECORD OF PREVIOUS YEARS.

	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946
Deaths ... ...	173	194	229	204	194	158	161	146	118	128
Mortality rate per 1,000 ... ...	0·60	0·67	0·81	0·75	0·72	0·60	0·62	0·56	0·44	0·45

#### V.—MATERNITY AND CHILD WELFARE.

##### (A) INFANT MORTALITY IN 1946.

The infantile mortality rate for the year was 49 per 1,000 births. This rate is 16 per 1,000 births less than the rate for 1945.

##### CORRECTED INFANTILE MORTALITY RATES FROM 1937.

Year	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946
Bradford .. .	69	58	61	68	68	50	51	53	65	49
England and Wales	58	53	51	57	60	51	49	45	46	43

*Age Distribution of Infantile Mortality.* The infantile mortality rate in the first four weeks of life may be taken as an indication of the operation of antenatal and neonatal causes in bringing about infant deaths. This rate from 1919 is seen in the following table, where it will be noticed that the infantile mortality during these early weeks of life has, on the whole, shown a fall during the past twenty years. There is, however, little change in the rate in the first week of life.

INFANTILE MORTALITY RATE PER 1,000 BIRTHS IN THE FIRST FOUR  
WEEKS OF LIFE, FROM 1919.

Year	Bradford				England and Wales Total for four Weeks	
	Week					
	1	2	3	4		
1919	34.0	5.9	4.2	2.7	47	40
1920	27.8	8.9	5.8	3.6	46	35
1921	29.9	6.8	4.9	2.8	45	35
1922	22.2	6.5	5.0	3.8	37	34
1923	22.9	5.3	4.0	4.2	36	32
1924	27.3	4.8	5.0	2.4	40	33
1925	23.8	4.1	4.8	3.1	36	32
1926	24.0	6.2	5.5	3.2	39	32
1927	25.0	5.8	3.0	2.5	36	32
1928	26.2	4.3	2.5	0.9	34	31
1929	24.4	3.7	3.9	3.2	35	33
1930	26.7	5.3	3.9	1.6	37	31
1931	26.5	5.6	2.9	2.2	37	32
1932	31.6	5.2	2.0	2.2	41	32
1933	21.3	3.8	4.9	2.1	32	36
1934	31.4	2.2	1.2	1.7	36	31
1935	28.8	3.3	0.8	2.5	35	30
1936	29.7	5.4	4.1	2.3	41	30
1937	25.7	3.5	3.5	2.0	35	30
1938	26.4	2.8	3.1	2.1	34	28
1939	26.3	2.1	2.5	1.9	33	28
1940	23.2	3.6	3.3	3.6	34	29
1941	23.7	3.4	2.8	2.3	32	29
1942	20.1	3.0	1.8	2.3	27	27
1943	20.0	2.4	1.9	1.4	26	25
1944	22.0	3.9	1.9	0.9	29	24
1945	20.3	5.0	3.6	0.7	29	24
1946	22.5	3.5	1.2	2.2	29	—

*Illegitimacy and Infantile Mortality.* Since 1937 the number and the percentage of illegitimate births are shown in the following table :—

ILLEGITIMACY IN BRADFORD FROM 1937.

Year	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946
Number ... ...	214	220	214	234	201	244	327	391	449	426
Percentage of total births ... ...	5.1	5.3	5.9	6.3	5.7	6.0	7.9	8.4	10.8	7.8

The following table shows the corrected Infantile Mortality Rates amongst these two classes of infants for the past ten years :—

## CORRECTED INFANTILE MORTALITY RATES AMONG ILLEGITIMATE AND LEGITIMATE INFANTS.

Year	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946
Illegitimate	107	64	104	56	84	69	76	67	80	70
Legitimate	67	58	59	69	67	50	47	52	63	47

*Place Distribution of Infantile Mortality.* The Ward which showed the highest infantile mortality was South, where the rate was 84 per 1,000 births, while the Exchange and Tong Wards showed a rate above 70 per 1,000. The rate was lowest in Bradford Moor and Thornton Wards, where it was below 30 per 1,000.

*Causes of Death in Infantile Mortality.* The table on page 75 shows the deaths from stated causes under one year for the past ten years, and the following table shows the rate from certain of the most serious causes.

INFANT MORTALITY RATE PER 1,000 BIRTHS, IN WARDS, FOR THE YEAR 1946

INFANT MORTALITY : NET DEATHS FROM STATED CAUSES UNDER 1 YEAR OF AGE FROM 1937.

Causes of Death.	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946
Chicken-pox	...	...	...	1	5	—	—	—	—	—
Measles	...	...	...	—	—	—	—	—	2	—
Scarlet Fever	...	...	...	—	—	—	—	—	—	—
Whooping Cough	...	...	8	8	1	4	8	5	5	3
Diphtheria and Croup	...	...	1	1	—	—	—	—	2	1
Erysipelas	...	...	1	—	1	—	—	—	—	—
Tuberculous Meningitis	...	...	1	—	—	2	—	1	3	—
Abdominal Tuberculosis	...	—	—	—	—	—	—	—	—	—
Other Tuberculous Diseases	...	—	—	—	—	—	—	—	—	—
Meningitis (not tuberculous)	3	4	1	1	—	—	1	1	2	1
Convulsions	...	...	17	14	7	19	8	10	9	6
Laryngitis	...	...	—	—	1	—	—	—	—	—
Bronchitis	...	...	6	3	6	15	14	9	7	4
Pneumonia (all forms)	...	...	45	35	23	46	32	27	46	45
Diarrhoea and Enteritis	...	...	30	21	26	17	21	17	14	17
Gastritis	...	...	1	—	—	—	1	—	—	—
Syphilis	...	...	4	—	1	—	1	—	—	—
Rickets	...	...	—	—	1	—	—	—	—	—
Suffocation (overlying)	...	...	1	—	1	4	2	—	1	1
Injury at Birth	...	...	5	18	13	8	4	9	4	8
Atelectasis	...	...	14	2	5	1	6	8	6	10
Congenital Malformations	...	...	28	17	35	29	31	19	17	19
Premature Birth	...	...	71	80	70	61	82	57	58	64
Atrophy, Debility and Marasmus	13	2	4	13	5	11	11	14	18	6
Other Causes	...	28	18	18	34	27	23	27	31	34
Total ...	278	228	218	251	242	206	213	249	271	265

## INFANTILE MORTALITY IN CERTAIN GREAT TOWNS FROM 1937

Deaths per 1,000 Births.

Town.	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946
Birmingham	...	...	60	61	60	70	69	56	55	42
Bradford	...	...	69	58	61	68	50	51	53	49
Bristol	...	...	46	42	42	56	54	37	35	37
Halifax	...	...	63	57	60	45	65	56	50	38
Huddersfield	...	...	61	66	72	74	80	86	51	43
Hull	...	...	77	69	62	70	76	68	69	58
Leeds	...	...	67	64	57	57	61	47	50	56
Leicester	...	...	63	46	49	51	55	50	48	39
Liverpool	...	...	82	73	71	84	106	76	81	57
Manchester	...	...	76	69	61	70	84	64	60	53
Newcastle	...	...	82	66	62	64	76	59	64	50
Portsmouth	...	...	44	60	52	49	56	41	47	44
Salford	...	...	84	74	69	76	96	77	69	62
Sheffield	...	...	55	50	48	55	67	49	56	41
Stoke-on-Trent	...	...	81	52	61	61	63	49	62	51
West Ham	...	...	62	57	45	42	55	49	54	43

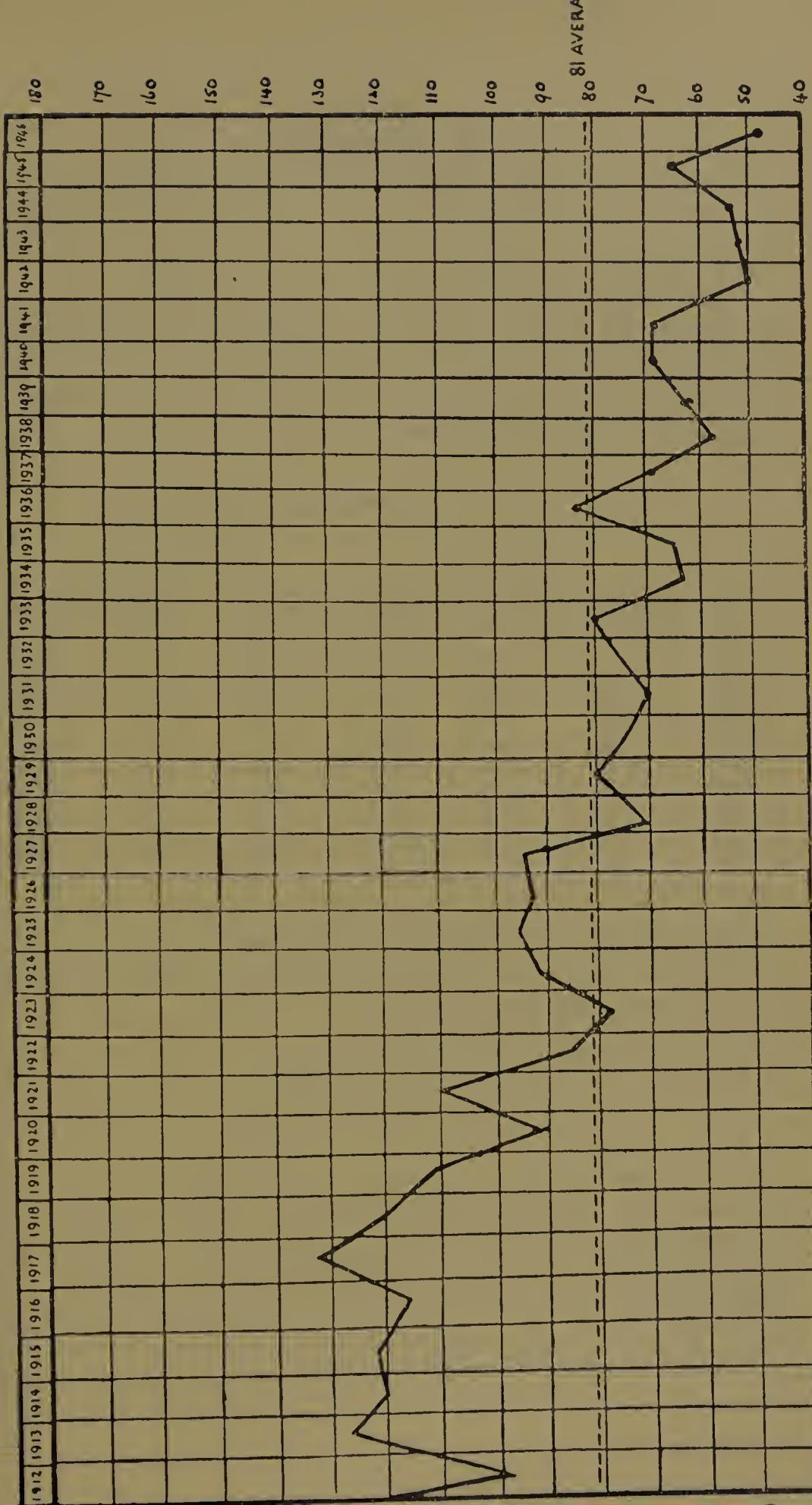
## INFANT MORTALITY, 1921-1946.

YEAR	Deaths under One Year of Age per 1000 Births		
	Total	Diarrhoeal Diseases	Total less Diarrhoeal Diseases
1921	109	8	101
1922	87	4	83
1923	78	4	74
1924	92	6	86
1925	95	7	88
1926	92	13	79
1927	92	7	85
1928	69	6	63
1929	80	5	75
1930	75	5	70
1931	71	5	66
1932	75	6	69
1933	79	8	71
1934	62	4	58
1935	64	5	59
1936	82	9	73
1937	69	7	22
1938	58	5	53
1939	61	7	54
1940	68	4	64
1941	68	6	62
1942	50	4	46
1943	51	3	48
1944	53	4	49
1945	65	9	54
1946	49	6	43

INFANT MORTALITY IN BRADFORD AND ENGLAND AND WALES  
FOR EACH YEAR, AND IN GROUPS OF FIVE YEARS SINCE 1901.

BRADFORD		ENGLAND AND WALES		BRADFORD		ENGLAND AND WALES	
1901	168	Average	151	Average	1926	92	Average
1902	139		133		1927	92	69
1903	148	{ 153	132	{ 138	1928	69	{ 65
1904	167		145		1929	80	74
1905	144		128		1930	75	60
1906	152		132		1931	71	66
1907	124		118		1932	75	65
1908	143	{ 132	120	{ 117	1933	79	{ 70
1909	116		109		1934	62	59
1910	127		106		1935	64	57
1911	139		130		1936	82	59
1912	99		95		1937	69	58
1913	128	{ 122	109	{ 110	1938	58	{ 68
1914	122		105		1939	61	53
1915	123		110		1940	68	50
1916	119		91		1941	68	56
1917	132		97		1942	50	59
1918	125	{ 117	97	{ 91	1943	51	{ 57
1919	114		89		1944	53	49
1920	93		80		1945	65	46
1921	109		83		1946	49	46
1922	87		77				43
1923	78	{ 92	69	{ 76			
1924	92		75				
1925	95		75				

*MONIAVIA MOKIHALIS*, 1912-1946.  
Average for 35 years ... 81.



## (B) MATERNITY.

There were 8 deaths of women in childbirth during 1946 which gives a maternal mortality rate of 1.46 per 1,000 of the total births, including the still-births.

The causes of death of women in childbirth may conveniently be divided into two groups, those due to septic infection and those due to toxæmias and other causes. The record of the mortality rate per 1,000 births from each of these groups in previous years in Bradford and England and Wales is shown below.

**MATERNAL MORTALITY RATES IN PREVIOUS YEARS.**

Year	BRADFORD			ENGLAND AND WALES		
	Puerperal Sepsis	Other Puerperal Causes	Total Puerperal Mortality	Puerperal Sepsis	Other Puerperal Causes	Total Puerperal Mortality
1936	1.47	3.17	4.64	1.34	2.31	3.65
1937	0.95	1.67	2.62	0.97	2.26	3.23
1938	0.49	3.66	4.15	0.89	2.19	3.08
1939	1.32	1.85	3.17	0.74	2.82	3.56
1940	1.05	1.83	2.85	0.52	1.64	2.16
1941	1.63	1.36	2.99	0.48	1.75	2.23
1942	1.20	1.20	2.40	0.42	1.59	2.01
1943	0.70	2.08	2.78	0.73	1.56	2.29
1944	0.83	1.67	2.50	0.59	1.34	2.93
1945	0.70	2.57	3.27	0.49	1.30	1.79
1946	0.35	1.11	1.46			

These deaths are classified in the three following tables, according to the age periods of the mother, the duration of pregnancy, and the condition from which the deaths arose.

### DEATHS IN CHILDBIRTH.

#### (1) Age and Classified Cause.

Classified Cause	Age in Years					
	20	25	30	35	40	Total
Toxæmias ...	...	...	1	1	—	3
Septic Conditions ...	...	...	1	—	—	1
Ectopic Gestation ...	...	...	—	—	—	—
Hæmorrhage ...	...	...	1	—	—	1
Other Causes ...	...	...	1	—	2	3
Total ...	—	4	1	3	—	8

## (2) Duration of Pregnancy and Classified Cause.

Classified Cause	Duration of Pregnancy									
	1 mth.	2 mos.	3 mos.	4 mos.	5 mos.	6 mos.	7 mos.	8 mos.	9 mos.	Total
Toxæmias . . .	—	—	—	—	—	—	1	—	2	3
Septic Conditions	—	—	—	—	—	—	—	—	1	1
Ectopic Gestations	—	—	—	—	—	—	—	—	—	—
Hæmorrhage ..	—	—	—	—	—	—	—	—	1	1
Other Causes ..	—	—	—	—	—	—	—	3	3	3
Total ..	—	—	—	—	—	—	1	—	7	8

## (3) Age Period and Duration of Pregnancy.

Duration of Pregnancy	Age Period—Years					
	20	25	.30	35	40	Total
1 month .. . .	—	—	—	—	—	—
2 months .. . .	—	—	—	—	—	—
3 months .. . .	—	—	—	—	—	—
4 months .. . .	—	—	—	—	—	—
5 months .. . .	—	—	—	—	—	—
6 months .. . .	—	—	—	—	—	—
7 months .. . .	—	—	1	—	—	1
8 months .. . .	—	—	—	—	—	—
9 months .. . .	—	3	1	3	—	7
Totals .. . . .	—	4	1	3	—	8

*Supervision of Midwives.* The work is undertaken by a non-Medical Supervisor of Midwives under the direction of the Chief Assistant Medical Officer for Maternity and Child Welfare.

The municipal midwives are seen at least once a week and the midwives in private practice are also inspected at regular intervals. In accordance with the provisions of the Nursing Homes Registration Act, 1927, maternity homes have been inspected regularly throughout the year.

The number of midwives practising in Bradford on 31st December, 1946, was 55. Of these 28 were municipal midwives, 22 practising in institutions and nursing homes, and 3 in private practice. The municipal midwives attended 1,935 cases, 1,758 as midwives and 177 as maternity nurses; 885 cases occurred in maternity homes; 115 were midwifery cases, and 770 were attended by doctor; 100 cases were attended by 3 midwives in private practice, 56 as midwives, and 44 as maternity nurses.

The visits paid by the midwives were as follows :—

		Ante-Natal Visits.	Post-Natal Visits.
Municipal midwives	...	16,292	28,917
Midwives in private practice	...	765	1,404
		17,057	30,321

The number of notifications of sending for medical aid was 667 or 34% of their cases. In 525 cases medical aid was called on account of the mother, and in 142 cases on account of the child, as follows :—

The Mother			The Child		
Abortion	..	9	Abnormalities	..	12
Adherent Placenta	..	18	Asphyxia	..	11
Albumenuria	..	12	Convulsions	..	3
Ante-Natal	..	12	Dangerous Feebleness	..	17
Antepartum Hæmorrhage	..	23	Hare Lip and Cleft Palate	..	1
Eclamptic Fits	..	1	Inflammation of Eyes	..	60
Heart Trouble	..	1	Jaundice	..	4
Illness of Mother	..	19	Melæna	..	2
Malpresentation	..	20	Prematurity	..	12
Mastitis	..	3	Skin Eruptions	..	12
Œdema	..	3	Spina Bifida	..	2
Phlebitis	..	4	Tongue-Tie	..	3
Postpartum Hæmorrhage	..	19	Umbilicus Hæmorrhage	..	2
Placenta Prævia	..	1			
Premature Labour	..	4			
Prolapse of Cord	..	1			
Prolonged Labour	..	60			
Pyrexia	..	45			
Retained Membranes	..	3			
Ruptured Perineum	..	221			
Shock	..	3			
Toxæmia	..	—			
Uterine Inertia	..	21			
Other Emergencies	..	22			
Total..	..	525	Total	..	142

The midwives reported 29 still births.

Under the Midwives' Act, 1918, the total number of claims for midwifery fees sent in by medical practitioners during 1946 was 377. The Local Supervising Authority determined to recover in full 224 of these claims, and in part 4, leaving 58 to be paid in full by the Authority. The total cost to the Authority of these claims was £100 4s. 9d.; 91 claims remained not dealt with during this year.

In addition, 29 midwives' fees were paid in full by the Authority, and 5 paid in part, the total to the Authority being £46 2s. 6d.

#### *Ante-Natal Work.*

Six sessions weekly are held at the Central Clinic for ante-natal patients.

The times are as follows :—

Monday Morning ... 9—10.

Tuesday Morning ... 9—10.      Tuesday Afternoon 1.30—2.30.

Wednesday Morning 9—10.

Thursday Morning ... 9—10.

Friday Morning ... 9—10.

#### BRANCH CLINICS.

Ante-natal patients are seen at the following Children's Clinics :—

Southend Hall: Thursday Afternoon

Idle:                        Friday Afternoon

Bierley:                       Wednesday Morning

The Health Visitors visited 5,131 of the 6,012 births notified. Because of the inadequate number of Health Visitors only 21,820 were paid to these infants, representing an average of 4.25 visits per child. Most infants should be visited 11 times during the first year, and special visitation should be possible in cases of prematurity, illegitimacy and neglect. It was only possible to pay 900 special visits, and premature infants were paid only one extra visit during their first month of life. It is increasingly difficult to make special visits to illegitimate children, but many of these have been accommodated at the Day Nurseries.

Health Visitors have supervised 64 cases pending adoption, of which 50 were arranged by the department.

The accommodation for maternity cases available in Bradford is 150 beds at the Municipal General Hospital, and 25 beds at St. Monica's Home.

The number of cases dealt with at St. Monica's Home was 65.

The number of Puerperal Fever cases notified in 1946 was 2, and of Puerperal Prexia 21, of which 16 were admitted to Hospital. There were 2 deaths from Puerperal Fever.

The total number of cases of Ophthalmia Neonatorum notified was 25, in 24 cases the vision was unimpaired, in 1 case the patient removed from the district.

*Still Births.* The number of still births registered in 1946 was 2·9% of the total births registered. The number notified was 157 and for the purpose of comparison the following table is given :—

#### STILL BIRTHS NOTIFIED IN PREVIOUS YEARS.

Year ...	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946
Number	179	165	182	181	160	138	182	134	148	127	157
Per cent.	4·3	3·8	4·4	4·5	4·1	3·6	4·3	3·3	3·4	3·1	2·9

#### (C) INFANCY.

During the year 1946 the number of births registered in Bradford was 5,404, while the number notified under the Notification of Births Act, 1907, was 5,894.

#### RECORD OF PREVIOUS YEARS.

	1938	1939	1940	1941	1942	1943	1944	1945	1946
Births registered	4,096	3,612	3,685	3,551	3,977	4,157	4,645	4,136	5,404
Births notified	4,121	3,950	3,856	3,741	4,178	4,068	4,251	4,068	5,894
Notifications to 100 registrations	100·6	106·5	104·6	105·3	107·5	95·9	91·5	98·3	109·0

## TIME OF RECEIPT OF NOTIFICATION OF BIRTHS, 1946.

Persons notifying	Receipt of Notification							Total	Per cent received late
	Within 2 days	3-7 days	1-2 weeks	2-3 weeks	3-4 weeks	1-2 m'nthys	2-3 m'nthys		
Doctor ...	22	20	6	1	—	1	—	50	56·0
Midwife ...	1,368	554	32	2	4	—	—	1,960	30·0
Father ...	—	—	—	—	—	—	—	—	—
Doctor and Midwife ...	1	1	1	—	—	—	—	3	66·6
Father and Doctor ...	—	1	—	—	—	—	—	1	100·0
Institutions	2,649	1,087	117	19	6	2	—	3,880	31·7
Total ...	4,040	1,663	156	22	10	3	—	5,894	31·4

Following the receipt of the notification generally all cases notified by midwives are visited as soon as possible after the birth, and also those cases with doctors in attendance where the home circumstances seem to warrant it. The number of births notified in 1946 which were visited was 5,131, or 87% of all the births.

## BIRTHS VISITED IN 1946.

Person in attendance	Times between Birth and Visit					Total
	1 week	2 weeks	3 weeks	4 weeks	Over 4 weeks	
Doctor ... ... ...	318	205	49	—	20	592
Midwife ... ... ...	—	1,846	—	—	—	1,846
Institution ... ... ...	—	2,693	—	—	—	2,693

Of the 5,131 births visited it was considered necessary to visit nearly all of them frequently during the first year of life.

*Child Centres.* The Local Authority conducts 14 Child Clinics in the city, at each of which a medical officer attends. The principal child clinic is situated in Edmund Street, and it is open every week-day morning and afternoon except Thursdays and Saturdays, when it is open in the morning only. The following table shows the location of each clinic, the days on which it is in operation, and the total attendances last year.

CHILD CLINICS IN BRADFORD.

Clinic	Days of Attendance	Times of Attendance	Attendances during year
Central, Edmund Street	Daily ...	Morning and Afternoon	19,704
Mount Street ...	Thursday ...	Afternoon ...	1,453
Green Lane ...	Monday and Thursday	Afternoon ...	6,449
Otley Road ...	Wednesday	Morning and Afternoon	6,547
Brownroyd ...	Tuesday ...	Morning and Afternoon	5,738
Great Horton ...	Monday ...	Morning ...	2,555
Wakefield Road	Alternate Wednesdays	Afternoon ...	1,079
Low Moor ...	Tuesday ...	Afternoon ...	3,444
Lapage Street ...	Thursday	Afternoon ...	5,226
Idle ...	Friday ...	Afternoon ...	2,785
Ravenscliffe (opened 14/12/45)	Friday ...	Afternoon ...	1,702
Clayton ...	Alternate Wednesdays	Afternoon ...	1,155
Bierley ...	Thursday	Morning ...	1,325
Esholt ...	Wednesdays (monthly)	Afternoon ...	139
Nursing Mothers' Ward	Monday ...	...	
	Wednesday ...	...	
	Friday ...	Morning and Afternoon	606

These centres are all doing excellent work and are keenly appreciated by those who take advantage of their services. They are primarily special educational institutions for instruction to mothers on how to keep babies and young children healthy. Mothers seeking such knowledge are welcomed, especially if the baby is well it is often too late to seek this knowledge when the baby is ill. All mothers require this knowledge and the work of the centres is directed to benefiting the child through the mother, whose co-operation is most desired.

Immunisation and Vaccination Clinics are held at the Central Clinic on Thursday afternoons and Saturday mornings.

The total number of attendances at all Clinics during 1946 was 70,266. The attendance at the Central Clinic was 23,453 and at the branches 46,813. The number of infants attending clinics for the first time under one year was 3,790, or 70·2% of the births. The number of children attending for the first time over one year was 174. Fifty-seven thousand one hundred and sixty-two of the attendances were made by children under one year of age and 13,104 by children between the ages of one and five years.

The work at the Central Clinic is arranged into sessions for infants, sessions for children, and "family" sessions attended by mothers who have an infant and one or more children. At the branch clinics, which are attended for the most part by mothers and families, infants and young children are dealt with at each session.

The following table shows the growth of the work at the Clinic since its inception.

#### CHILD CLINICS.

Year	New Cases	Total attendances	Average weekly attendances	Average daily attendances
1914	2,488	31,193	600	120
1915	1,987	28,192	540	108
1916	1,998	23,490	452	90
1917	1,721	19,194	369	74
1918	1,606	17,068	328	65
1919	1,810	19,496	375	75
1920	2,832	28,829	554	110
1921	2,872	35,784	688	137
1922	2,115	25,868	497	99
1923	1,926	24,320	468	93
1924	1,822	24,952	480	96
1925	3,102	35,937	680	136
1926	2,551	38,279	736	147
1927	2,341	41,337	795	159
1928	2,604	50,689	975	195
1929	2,804	55,030	1,101	220
1930	2,908	60,135	1,203	241
1931	2,782	64,749	1,295	259
1932	2,633	66,233	1,325	265
1933	2,634	68,081	1,362	272
1934	3,087	67,702	1,354	271
1935	2,615	69,062	1,381	276
1936	2,590	64,806	1,296	259
1937	2,737	67,816	1,356	271
1938	2,961	82,458	1,649	330
1939	2,650	74,236	1,427	203
1940	2,597	55,489	1,067	152
1941	2,602	50,694	974	138
1942	2,926	58,345	1,122	159
1943	3,225	66,462	1,278	182
1944	3,519	70,340	1,333	194
1945	3,016	58,600	1,126	160
1946	3,714	59,607	1,146	163

*Infant Life Protection.*

*Children Act, 1908, and Children and Young Persons Act, 1932.*

Under the provisions of this Act every person, other than a relative, who undertakes for payment the nursing and maintenance of any child under the age of nine years, apart from its parents, or having no parents, must give notice to the Local Authority.

At the end of 1946 there were 34 persons on the Register who were receiving children for reward in Bradford. The number of children on the register was 34. One hundred and ninety-three visits were paid by Health Visitors to these foster children.

**(D) GENERAL.**

The Health Visitors paid 51,955 visits to cases during the year. Of there, 927 were made to ante-natal cases, 26,951 to infants under 1 year, 5,131 being primary visits, 20,253 to children between 1 and 5 years of age, 2,533 to tuberculosis cases, 98 to cases of infective enteritis, 232 to cases of measles, 671 to cases of whooping cough, and 1,192 to nursing mothers and other cases.

The dental work in connection with maternity and child welfare is shown in the table on page 125, where it will be seen that 462 mothers and 364 young children were under treatment for dental conditions during 1946.

The main voluntary effort in connection with Maternity and Child Welfare in Bradford is undertaken by the Bradford Maternity Care Committee, which still continues its educational work among mothers attending various centres. Mothers are instructed in dressmaking, sewing, knitting, cookery and mothercraft by experienced teachers. There are five centres, namely, Wakefield Road, Otley Road, Lilycroft and Green Lane. The total number of mothers registered at the classes is 245.

During the year 1,560 new garments were made at the classes, and over 300 garments were re-made from old clothes brought by the mothers. There was also a good proportion of garments knitted by the mothers. A maternity box is available for the use of the poorer members at the time of their confinement.

The City of Bradford Silver Jubilee Home, which is a holiday and convalescent home for mothers and children in temporary premises at Ilkley had a most successful season. During the summer months 147 mothers and 217 children visited the Home. Out of this number 123 paid for themselves, 20 were sent to the Home by the Bradford Hospital and Convalescent Fund, and 4 by other organisations. Six children were sent by the Victoria Convalescent Fund.

*Home Helps.* During the year home helps have attended 38 cases, covering 474 days. Of these, 5 received the service free, and 25 paid part cost, and 8 paid full cost.

During the year the permanent Home at Heysham was de-requisitioned, and in October the removal from the temporary premises at Ilkley was accomplished.

## VI.—BACTERIOLOGICAL AND PATHOLOGICAL WORK.

REPORT BY THE ASSISTANT CITY PATHOLOGIST,

V. R. HECHT, M.D.

Fifty-six thousand four hundred and ninety-seven samples and specimens were examined in the City Laboratories during 1946, 1,257 specimens more than in 1945, and the highest figure reached so far, although the numbers of specimens for various groups have diminished, e.g. for Diphtheria by 1,203, various infectious diseases by 906, biochemical tests by 2,551, blood donor tests by 575; there is a general increase caused mainly by an increase of tests for Venereal Diseases by 5,143 and "clinical-pathological" tests by 1,451.

The number of tests for blood donors has diminished as the work in the area is now centralised in the "Blood Transfusion Service" attached to the University of Leeds, and the number of blood donors decreased after the war, although it would be desirable to encourage blood donors more for civil cases.

## ANALYSIS OF THE WORK IN THE LABORATORIES, 1941-1946.

	1941	1942	1943	1944	1945	1946
Diphtheria .. ..	6,907	8,478	8,907	8,437	7,039	5,836
Venereal Diseases .. ..	12,140	13,878	18,430	19,187	23,214	28,357
Infectious Diseases (Others)	4,595	4,593	5,020	4,609	4,957	4,051
Food, Water, Ice Cream	3,595	3,695	3,374	2,884	2,907	2,805
Clinical .. ..	4,474	6,445	6,804	7,926	11,135	12,586
Bio-chemical .. ..	2,639	3,880	3,972	4,024	4,983	2,432
Tests on Blood Donors	16,985	3,080	2,578	1,500	1,005	430
Total .. ..	51,335	44,049	49,085	48,567	55,240	56,497

*Anthrax:*

456 specimens of wool and hair were received from the Government Wool Disinfecting Station at Liverpool during the year; 228 specimens before disinfection and 228 after disinfection.

Bac. anthracis was isolated from four undisinfected specimens of East Indian Goat Hair; Bac. anthracis was not found in any of the disinfected specimens.

*Dysentery :*

544 specimens have been examined for the dysentery group of organisms. Positive results were obtained from 44 specimens from 28 patients; *Shigella sonnei* from 25 cases, *Shigella flexneri* from 3 cases. The examination in some cases was carried out many times (*Shigella sonnei* was isolated from 7 specimens from one patient).

*Enteric Fever and Food Poisoning :*

An outbreak of paratyphoid occurred in the Halifax area between June and September, 1946. *Salmonella paratyphi B.* was isolated from 19 patients connected with this outbreak, three of whom were from the Bradford area.

*Salmonella typhi* has been isolated from 4 patients and *Salmonella typhi murium* from one case during the year.

*Undulant Fever :*

A positive serological result was found in one case.

*Infectious Diseases Summary :*

Anthrax	...	...	...	...	...	...	456
Cerebrospinal Fever	...	...	...	...	...	...	22
Diphtheria—							
Swabs	5,799	...	...	...	...	...	
Typing	21	...	...	...	...	...	5,836
Virulence	16	...	...	...	...	...	
Dysentery	...	...	...	...	...	...	544
Enteric Fever—							
Widal	173	...	...	...	...	...	
Faeces	143	...	...	...	...	...	
Waters	4	...	...	...	...	...	421
Blood	25	...	...	...	...	...	
Urine	76	...	...	...	...	...	
Malaria	...	...	...	...	...	...	72
Poliomyelitis	...	...	...	...	...	...	3
Pneumococcal Meningitis	...	...	...	...	...	...	1

## Tuberculosis—

Sputa	2,210	...	...	...	...	...	}	2,472
Other species	261	...	...	...	...	...		
Meningitis	1	...	...	...	...	...		

Undulant Fever	...	...	...	...	...	...	40
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## Venereal Diseases—

Dark ground	197	...	...	...	...	...	}	28,357
Wassermann	11,793	...	...	...	...	...		
Kahn Reactions	11,291	...	...	...	...	...		
Gold Curves	130	...	...	...	...	...		

Gonococci	4,946	...	...	...	...	...	38,224
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*Venereal Disease :*

The work has increased considerably during the year partly due to the routine examination of all expectant mothers attending the Ante Natal Clinic, and partly due to the penicillin therapy of syphilis which renders more numerous serological tests necessary for the adequate control of treatment

## FOOD.

*Food, Milk and Water Summary :*

## Milk—

Inspectors' Samples	699	...	...	...	...	...	}	1,611
St. Luke's Hospital	144	...	...	...	...	...		
Institutions	43	...	...	...	...	...		
Biological Tests for tubercle bacilli	644	...	...	...	...	...		

Heat-treated (for phosphatase test)	81	...	...	...	...	...	...	...
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Waters	...	...	...	...	...	...	...	1,116
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Ice-cream	...	...	...	...	...	...	...	57
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## Food (poisoning)—

Corned, Pressed Beef	15	...	...	...	...	...	}	21
Gelatine	5	...	...	...	...	...		
Condensed Milk	1	...	...	...	...	...		

2,805
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Milk. 874 samples of raw milk were examined by the Methylene Blue Reductase Test and Presumptive Coliform test.

612 (70%) of these samples passed the Methylene Blue Reductase Test (compared with 61% in 1944 and 67% in 1945).

685 (78%) of these samples passed the Presumptive Coliform Test, showing that *Bac. coli* was absent from 0·01 c.c. (compared with 80% in 1944 and in 1945).

546 (62%) passed both tests (compared with 56% in 1944 and 62% in 1945).

#### PERCENTAGE OF TOTAL SAMPLES PASSING BOTH METHYLENE BLUE TEST AND B. COLI TEST.

Year	Percentage	Year	Percentage
1939	65%	1943	52%
1940	62%	1944	56%
1941	53%	1945	62%
1942	48%	1946	62%

The following table shows the detailed results of "Street" samples from both within and outside the City, in summer and in winter, during the year 1946:—

#### ROUTINE EXAMINATION OF MILK, 1946.

Samples from	Pass Methylene Blue Reductase Test			Pass Bac. Coli. Test		Pass M.B.R.T. and Bac. Coli. Tests	
	Total	No.	%	No.	%	No.	%
CITY Summer (4½ hours)	288	188	65	228	79	167	59
IN WINTER (5½ hours) . .	261	211	81	233	89	195	75
Total . .	549	399	73	461	84	362	66
CITY Summer (4½ hours)	175	84	48	89	51	68	39
OUT WINTER . . .	150	129	86	135	90	116	77
Total . .	325	213	65	224	69	184	56
Total "Street" Samples	874	612	70	685	78	546	62

#### Pasteurised Milk

During 1946 a small number of samples were submitted to the Phosphatase Test for evidence of adequate pasteurisation. The enzyme phosphatase is destroyed by heat rather more slowly than the tubercle bacillus. Absence of the enzyme from heat-treated milk indicates, therefore, that the milk has been heated sufficiently to destroy tubercle bacilli.

This test classifies pasteurised milks into three grades according to their content of residual enzyme :—

Group 1, which pass the test, show less than 2·3 Lovibond units;

Group 2, showing 2·4—6·0 Lovibond units fail the test;

Group 3, showing more than 6 Lovibond units, suggests gross under-heating or adulteration with raw milk.

Of 80 samples received during the year, 76 fall into Group 1, 1 into Group 2, and 3 into Group 3.

#### *Biological Tests for Tubercle Bacilli in Milk.*

644 samples of milk were examined for tubercle bacilli by guinea-pig inoculation, and 17 samples (2·6%) were found to be positive.

The positive results in previous years were :—

1939	5%
1940/1/2/3	3%
1944	1·5%
1945	2·5%
1946	2·6%

#### *Water.*

Routine bacteriological examination of the City's water continue to show a very high standard of purity. Bac. coli was absent from 652 samples out of 686 routine samples taken by Sanitary Inspectors at regular intervals. Of the 34 samples in which Bac. coli was found, this organism proved to be of faecal type in 21 and non-faecal type in 13.

#### **WATER EXAMINATION, 1946.**

Source	High Level Supply				Intermediate (Nidd)				Low Level (Lower Barden)	
	Stubden, Horton Bank Top and Brayshaw		Thornton Moor		Chellow Heights		Gilstead and Chellow		Heaton	
Reservoir	No. examd.	No. B. coli in 100 c.c.	No.	Neg.	No.	Neg.	No.	Neg.	No.	Neg.
Jan.-Mch	45	44	36	36	29	27	13	13	77	74
Apl-June	34	34	27	26	16	16	18	18	71	70
July-Sept.	24	23	31	29	1	1	28	24	66	63
Oct.-Dec.	29	29	28	25	10	7	33	27	70	67
Total ..	132	130 (99%)	122	116 (95%)	56	51 (91%)	92	82 (89%)	284	274 (86%)

Comparison of results during the last eight years :—

Year	Percentage free from B. coli in 100 c.c.	Percentage free from faecal type coli in 100 c.c.
1939	90%	91%
1940	92%	96%
1941	92%	97%
1942	84%	90%
1943	89%	94%
1944	95%	96%
1945	94%	95%
1946	94%	96%

*Ice Cream.*

Bacteriological standards for ice cream are still badly needed; their continued absence makes the control of this food difficult.

57 samples of ice cream have been examined for viable count, Bact. coli and Clostridium welchii.

Viable Count, i.e. Total Bacteria per c.c.	Number of Specimens
More than 400,000 colonies on Agar at 37°C. . . . .	24
Between 100,000 and 400,000 on Agar at 37°C. . . . .	9
Less than 100,000 colonies on Agar at 37°C. . . . .	15
Less than 10,000 colonies on Agar at 37°C. . . . .	9
Total . . . . .	57

Bact. coli.	Samples	Percentage
Absent from 1 c.c. (compared with 45 per cent as average of 10 years (1929-1938)) . . . . .	7	12%
Absent from 0.1 c.c. (compared with 66 per cent as average of 10 years (1929-1938)) . . . . .	10	17.5%
(Cl. welchii present in 16 samples)		

No organisms of the enteric, dysentery or salmonella group were recovered from any of the ice cream samples.

## CLINICAL SPECIMENS AND PATHOLOGY.

## General :—

Blood Cultures	...	...	...	...	46
Cerebrospinal fluid	...	...	...	...	293
Urine	...	...	...	...	2,515
Faeces	...	...	...	...	517
Pus	...	...	...	...	349
Body fluids	...	...	...	...	334
Trichomonas Vaginalis	...	...	...	...	486
Sputa (general, excluding T.B.)	...	...	...	...	85
Semen	...	...	...	...	27
Ringworm (Hairs)	...	...	...	...	215
Intestinal Parasites	...	...	...	...	1

## Swabs :—

Hæmolytic streptococci	...	...	...	...	1,894
Vincent's organisms	...	...	...	...	114

## Hæmatological :—

Blood counts	...	...	...	...	2,795
Sternal marrow	...	...	...	...	5
Coagulation time	...	...	...	...	19
Fragility test	...	...	...	...	1
Paul-Bunnell	...	...	...	...	10
Sedimentation Rate	...	...	...	...	1,247
<hr/>					
Histological Sections	...	...	...	...	776
Post-mortems	...	...	...	...	246
Blood grouping	...	...	...	...	430
Schick tests	...	...	...	...	98
Diphtheria immunisation	...	...	...	...	93
<hr/>					
					12,596

## Biochemical :—

Blood	Urea	...	...	...	948
,,	Non-protein Nitrogen	...	...	...	11
,,	Total protein	...	...	...	11
,,	Chlorides	...	...	...	7
,,	Sugar	...	...	...	258
,,	Glucose tolerance curves	...	...	...	49
,,	Van den Burgh	...	...	...	72
,,	Cholesterol	...	...	...	22
,,	Calcium	...	...	...	15
,,	Inorganic Phosphate	...	...	...	6
,,	Sodium	...	...	...	2
,,	Uric Acid	...	...	...	3
,,	Phosphatase	...	...	...	39
Urine	Urea concentration test	...	...	...	448
,,	qualitative tests	...	...	...	296
Fæces	Occult Blood	...	...	...	2
,,	Other qualitative tests	...	...	...	19
,,	Fat	...	...	...	
Test Meals	...	...	...	...	421
					2,632

## VII.—HOSPITAL ACCOMMODATION.

In the first portion of this report reference is made to the hospital accommodation in the City; in this portion further details of the hospitals under the control of the Local Authority are given.

### (A) MUNICIPAL GENERAL HOSPITAL.

REPORT BY IAN D. CAMPBELL, M.B., CH.B., MEDICAL  
SUPERINTENDENT.

I have the honour to present the annual report on the working of the Bradford Municipal General Hospital for the year ended December 31st, 1946.

During the period under review the work carried out by all wards and departments of the hospital continued to increase despite the difficulties experienced in obtaining the required numbers of nursing staff.

General comparisons for the past 3 years are shown in the following table :—

		1946	1945	1944
No. of Admissions	...      ...	14,743	14,047	12,936
No. of Live Births	...      ...	2,786	2,493	2,563
No. of Operations	...      ...	4,607	4,650	3,786
Average time spent in Hospital (in days)	...      ...      ...	20·47	21·31	20·40

The working of the Hospital during the year is shown below :—

No. of In-patients on December 31st, 1945	...	...	...	839
No. of Admissions during the year	...	...	...	11,957
No. of Live Births during the year	...	...	...	2,786
				_____
				15,582
				_____
No. of In-patients on December 31st, 1946	...	...	...	775
No. of Discharges during the year	...	...	...	13,577
No. of Deaths during the year	...	...	...	1,230
				_____
				15,582
				_____

The admissions from outside have been distributed throughout the hospital as follows :—

(The corresponding figures for 1945 are given in brackets)

		Male	Female	Children	Total
Medical Wards	...	1,453	1,409	337	3,199
		(1,495)	(1,457)	(346)	(3,298)
Surgical Wards	...	1,922	3,042	461	5,425
		(2,287)	(2,683)	(298)	(5,268)
Maternity Wards	...		3,333		3,333
			(2,988)		(2,988)
Live Births	...			2,786	2,786
				(2,493)	(2,493)
Totals	...	3,375	7,784	3,584	14,743
		(3,782)	(7,128)	(3,137)	(14,047)

TABLE SHOWING DISEASES FROM WHICH PATIENTS SUFFERED

Disease	Males		Females		Total
	Over 16	Under 16	Over 16	Under 16	
Infective diseases of Tropical Climates .. .	13	—	—	—	13
Infective diseases commonly arising in the intestinal tract .. . . .	6	5	6	3	20
Tuberculosis of the Respiratory System .. .	58	3	34	4	99
Tuberculosis of other organs and sarcoidosis.. .	27	27	36	19	109
Syphilis and its sequelæ .. . .	21	2	29	1	53
Gonorrhœa and other venereal disease .. .	15	—	—	1	16
Other Bacterial Diseases .. . .	3	5	5	2	15
Influenza and diseases attributable to filterable viruses .. . . . .	5	9	16	6	36
Other infective and parasitic diseases.. . .	11	19	4	19	53
Rheumatic diseases .. . . .	4	6	4	2	16
	163	76	134	57	430
Malignant neoplasms of:—					
Buccal cavity and pharynx .. . .	5	—	2	—	7
Digestive Organs .. . . .	108	—	82	—	190
Respiratory Organs .. . . .	40	—	15	—	55
Breast and female genital organs .. . .	—	—	103	—	103
Male genital organs .. . .	19	—	—	—	19
Other malignant neoplasms .. . .	31	2	20	1	54
	203	2	222	1	428
Non-malignant tumours and cysts .. . .	42	2	145	8	197
Allergic Disorders .. . . . .	11	5	13	2	31
Diabetes Mellitus and Disorders of Carbohydrate Metabolism... . . .	30	1	48	—	79
Diseases of Thyroid Gland .. . . .	2	—	12	1	15
Diseases of other Endocrine Glands .. . .	—	3	1	—	4
Metabolic Disorders and general diseases .. .	—	—	3	1	4
Nutritional Diseases and avitaminosis .. .	2	2	2	—	6
Chronic poisoning and Intoxication .. .	11	—	—	—	11
	56	11	79	4	150
Diseases of the blood forming organs and lymphoid tissue .. . . .	27	12	32	13	84
Inflammatory Diseases of the Brain, spinal cord and Meninges .. . . .	5	1	3	1	10
Intracranial lesions of vascular origin.. . . .	95	—	107	2	204
Diseases of Intracranial and Peripheral nerves ..	14	—	12	1	27
Mental Deficiency, abnormal character states and psycho-neurosis .. . . .	25	3	45	5	78
Psychoses .. . . . .	—	—	5	—	5
Other diseases of the nervous system.. . .	25	4	16	3	48
	164	8	188	12	372

TABLE SHOWING DISEASES FROM WHICH PATIENTS SUFFERED—*continued.*

Disease	Males		Females		Total
	Over 16	Under 16	Over 16	Under 16	
Diseases of the Eye .. .. ..	11	6	22	9	48
Diseases of the Auditory System .. ..	6	24	5	21	56
	17	30	27	30	104
Heart Disease believed to be of rheumatic origin .. .. .. ..	9	2	35	1	47
Inflammatory Heart Disease (non-rheumatic) ..	3	—	—	2	5
Sclerotic, hypertensive and degenerative heart disease .. .. .. ..	196	—	194	—	390
Other diseases of the heart .. .. ..	51	1	55	—	107
Diseases of Arteries .. .. ..	38	3	20	—	61
Diseases of Veins .. .. ..	88	1	96	1	186
	385	7	400	4	796
Diseases of the Nasal fossæ, nasopharynx, larynx and bronchi .. .. .. ..	107	20	65	18	210
Inflammatory Diseases of the lungs, pleura ..	167	39	115	26	347
Other Diseases of the lung .. .. ..	20	2	13	—	35
	294	61	193	44	592
Diseases of the Buccal Cavity .. .. ..	4	7	6	3	20
Diseases of the Pharynx and Oesophagus ..	11	106	12	107	236
Diseases of the Stomach and duodenum ..	179	1	72	1	253
Diseases of the small and large intestines ..	99	71	197	67	434
Functional disorders of stomach and intestines ..	20	1	45	9	75
Hernia and Intestinal Obstruction .. ..	148	69	69	8	294
Diseases of the Rectum and Peritoneum ..	52	4	35	8	99
	513	259	436	203	1411
Diseases of the Liver and Biliary Passages ..	36	—	65	1	102
Nephritis .. .. .. ..	24	3	17	4	48
	60	3	82	5	150
Pyogenic disorders of Genito-Urinary tract and calculi .. .. .. ..	28	4	40	4	76
Other diseases of the genito-urinary tract ..	32	6	30	1	69
Diseases of the Male Genital Organs .. ..	114	36	—	—	150
Diseases of the Breast, Ovary and parametrium ..	—	—	77	—	77
Diseases of the Uterus and other female genital organs .. .. .. ..	—	—	415	2	417
	174	46	562	7	789

TABLE SHOWING DISEASES FROM WHICH PATIENTS SUFFERED—*continued.*

Disease	Males		Females		Total
	Over 16	Under 16	Over 16	Under 16	
Malpresentations, Hæmorrhages and Toxæmias of pregnancy .. . . .	—	—	13	—	13
Other complications of pregnancy .. . .	—	—	33	—	33
Abortion (spontaneous or induced, under 7 months gestation). Includes 62 threatened abortions .. . . .	—	—	471	—	471
Childbirth complications .. . . .	—	—	3	—	3
Complications of the puerperium .. . .	—	—	85	—	85
	—	—	605	—	605
Infective conditions of the skin and dermatitis	112	50	115	45	322
Other skin diseases .. . . .	47	10	40	7	104
	159	60	155	52	426
Arthritis and Rheumatism .. . . .	45	2	66	—	113
Diseases of Bones and Joints .. . . .	49	19	35	16	119
Diseases of Muscles, Ligaments and deformities	33	8	58	10	109
	127	29	159	26	341
Congenital Malformations .. . . .	4	40	8	38	90
Diseases peculiar to the 1st year of life .. . .	—	12	—	9	21
	4	52	8	47	111
Ill-defined conditions and symptoms .. . . .	121	21	137	17	296
Special admissions or examinations .. . . .	23	37	32	19	111
	144	58	169	36	407
Surgical amputations .. . . .	4	—	—	—	4
Head injuries .. . . .	40	12	19	6	77
Open wounds and laceration of body .. . . .	35	20	20	4	79
Bruising, Contusions and Hæmatoma .. . . .	17	6	24	3	50
Foreign bodies .. . . .	2	4	—	4	10
Crushing injuries .. . . .	—	1	—	—	1
Traumatic amputations .. . . .	2	2	—	—	4
Nerve injuries .. . . .	1	—	—	—	1
	101	45	63	17	226
Fracture of skull .. . . .	23	11	9	2	45
Fractures or fracture dislocation of the vertebral column .. . . .	7	—	3	1	11
Fracture of trunk bones .. . . .	11	—	8	—	19
Fracture of upper limbs .. . . .	17	7	19	3	46
Fracture of lower limbs .. . . .	50	6	66	2	124
Multiple fractures .. . . .	—	—	1	—	1
Dislocations .. . . .	5	2	5	1	13
Sprains and strains .. . . .	1	—	3	—	4
	114	26	114	9	263

TABLE SHOWING DISEASES FROM WHICH PATIENTS SUFFERED—*continued.*

Disease	Males		Females		Total
	Over 16	Under 16	Over 16	Under 16	
Hæmorrhage, shock and kindred syndromes ..	2	2	4	2	10
Other complications of trauma .. ..	1	2	3	—	6
	3	4	7	2	16
Acute poisoning and its late effects ..	7	1	10	2	20
Burns and Scalds .. .. ..	6	16	9	10	41
	13	17	19	12	61
General effects of external cause .. ..	—	—	1	1	2
Late complications of therapeutic procedures ..	13	2	6	—	21
Therapeutic misadventures .. .. ..	2	—	3	—	5
	15	2	10	1	28

## OUT-PATIENT ATTENDANCES.

*Out-patient Department.*

Consultations.	Surgical	...	...	...	...	3,213
	Medical	...	...	...	...	2,849
	Orthopaedic	...	...	...	...	1,022
	Gynaecological	...	...	...	...	947
			Total	...	8,031	—
Casualties .. ..	...	...	...	...	...	5,888
Police Cases .. ..	...	...	...	...	...	1,107
Total Civilian Patients	...	...	...	...	...	13,604
Number of Attendances	...	...	...	...	...	28,929
Total Military Patients	...	...	...	...	...	315
Number of Attendances	...	...	...	...	...	458
Total—All Patients	...	...	...	...	...	16,341
Number of Attendances	...	...	...	...	...	29,387

*Fracture Clinic and Orthopaedic Clinic*

New patients	...	...	...	...	...	...	...	773
Number of Attendances	...	...	...	...	...	...	...	4,618

*Skin Clinic*

New Patients	...	...	...	...	...	...	...	671
Number of Attendances	...	...	...	...	...	...	...	3,407

*Physiotherapy Department*

Number of Patients	...	...	...	...	...	...	...	21,721
Attendances	...	...	...	...	...	...	...	53,432
Treatments	...	...	...	...	...	...	...	66,416

## RADIOLOGICAL DEPARTMENT.

During 1946 the following examinations and treatments were effected, as compared with those for 1945 :—

			1946	1945
No. of Patients	...	...	...	12,689
				13,321
No. of General and Local U.V.R. Treatments			24,656	21,059
No. of Clinical Attendances	...	...	913	842
No. of Superficial Therapy Treatments		...	306	65
No. of E.C.G. Examinations	...	...	256	276
No. of Dressings for Out-patients	...	...	2,465	690
No. of Films used	...	...	27,402	24,412

## DEATHS.

There have been 1,230 deaths in hospital during the year as compared with 1,171 in 1945. The relation between the ages of patients and the number of deaths is shown in the sub-joined table :—

Years of Age	—1	1—	11—	21—	31—	41—	51—	61—	71—	81—	91—	
Number of Deaths	..	137	9	28	33	43	78	184	289	314	113	2

## CAUSES OF DEATH AT ALL AGES

		Under 16	Over 16	Total
Tuberculosis of the respiratory system	..	..	1	42
Tuberculosis of other organs and sarcoidosis	..	..	—	11
Syphilis and its sequelæ	..	..	1	6
Other bacterial diseases	..	..	1	3
Malignant neoplasms of the buccal cavity and pharynx	..	—	7	7
Malignant neoplasms of the Digestive organs	..	..	—	115
Malignant neoplasms of the Respiratory organs	..	..	—	29
Malignant neoplasms of the Male genital organs	..	..	—	6
Malignant neoplasms of the Breast and Female Genital organs	..	—	37	37
Other malignant Neoplasms	..	..	1	21
Non-malignant Tumours and Cysts	..	..	1	5
Allergic Disorders	..	..	—	1
Diabetes Mellitus and Disorders of Carbohydrate Metabolism	..	—	14	14
Disease of the Thyroid Gland	..	..	—	2
Metabolic Disorders	..	..	—	1
Diseases of the Blood forming organs and lymphoid tissues	..	—	7	7
Inflammatory Diseases of the Brain stem, spinal cord and meninges	..	..	1	2
Intracranial lesions of vascular origin	..	..	—	145
Disease of Intracranial and peripheral nerves	..	..	—	1
Other Diseases of the Nervous System	..	..	—	4
Diseases of the Eye	..	..	—	1
Diseases of the Auditory System	..	..	2	2
Heart Disease believed to be of Rheumatic origin	..	..	—	9
Inflammatory Heart Disease (non-rheumatic)	..	..	—	1
Sclerotic, hypertensions and degenerative heart disease	..	—	243	243
Other diseases of the heart	..	..	—	35
Arterial Disease	..	..	—	24
Diseases of the Veins	..	..	—	1
Diseases of the Nasal fossæ, nasopharynx, larynx and bronchi	..	—	29	29
Inflammatory diseases of the lung and pleura	..	..	10	51
Other diseases of the Lung	..	..	—	30
Disease of the Pharynx and (Esophagus	..	..	—	1
Diseases of the Stomach and Duodenum	..	..	—	21
Diseases of the Small and Large Intestines	..	..	8	5
Functional disorder of the Stomach and Intestines	..	—	—	1
Hernia and Intestinal obstruction	..	..	—	21
Diseases of the Rectum and Peritoneum	..	..	1	1
Diseases of the Liver and Biliary Passages	..	..	1	10

CAUSES OF DEATH AT ALL AGES—*continued.*

			Under 16	Over 16	Total
Nephritis	...	...	2	26	28
Pyogenic disorders of the Genito-urinary tract	...	1	3	4	
Other diseases of the Genito-urinary tract	...	—	1	1	
Diseases of the Male Genital Organs	...	—	8	8	
Diseases of the Uterus and other Female organs	...	—	1	1	
Complications of the Puerperium	...	—	1	1	
Infective conditions of the skin and Dermatitis	...	—	4	4	
Other Skin Diseases	...	—	1	1	
Arthritis and Rheumatism	...	—	2	2	
Diseases of Bones and Joints	...	—	1	1	
Congenital Malformations	...	15	—	15	
Diseases peculiar to the 1st year of life	...	7	—	7	
Anuria, and acute retention of urine	...	—	13	13	
Senility	...	—	14	14	
Head Injuries	...	—	9	9	
Open wounds, and laceration of body	...	—	3	3	
Fractures of skull	...	1	7	8	
Fracture or fracture dislocation, vertebral column	...	—	1	1	
Fractures of upper limb	...	—	1	1	
Fractures of lower limbs	...	—	16	16	
Multiple fractures	...	—	1	1	
Hæmorrhage, shocks, kindred syndrome	...	1	5	6	
Acute poisoning and its late effects	...	1	2	3	
Burns and Scalds	...	1	1	2	
Late complications of Therapeutic procedures	...	—	1	1	
Total	...	57	1,067	1,124	
Maternal Deaths	...	—	7	7	
Services Deaths	...	—	7	7	
Neonatal Deaths	...	92	—	92	
Total	...	149	1,081	1,230	

## MATERNITY DEPARTMENT.

The attendance at the Hospital Ante-Natal Clinic numbered :—

New Patients	...	...	...	2,922
Total Attendances	...	...	...	21,008
Post-Natal Clinic Attendances	...	...	...	1,530

There are 118 beds in the Department, including 25 for the treatment of expectant mothers.

In the Maternity Wards there were 2,898 deliveries, including 112 stillbirths. The proportion of stillbirths was 38·61 per 1,000 births, as compared with 40·10 per 1,000 births last year. There were 7 maternal deaths.

Average duration of stay in the lying-in wards ... ... ...	11.77
Average duration of stay of mothers in the ante-natal beds ...	8.09

*Stillbirths.*

Cause	Number
Prematurity ... ... ...	10
Ante-partum Hæmorrhage ... ... ...	14
Anencephaly ... ... ...	14
Toxæmia of Pregnancy ... ... ...	8
Syphilis ... ... ...	1
Macerated ... ... ...	18
Obstructed Labour ... ... ...	2
Prolonged Labour ... ... ...	9
Hydrocephalus ... ... ...	4
Breech Presentation ... ... ...	6
Hydrops Fœtalis ... ... ...	2
Spina Bifida ... ... ...	1
Malpresentation ... ... ...	1
Diabetes Mellitus in the Mother ... ... ...	2
Prolapsed Cord ... ... ...	1
Eclampsia ... ... ...	2
Cerebral Hæmorrhage ... ... ...	3
Unknown ... ... ...	14
Total ...	112
Deaths of Infants within 10 days of Birth ...	92

*Maternal Deaths—Cause.*

1. Uræmia—Bilateral Cortical Necrosis. Toxæmia of Pregnancy.
2. Uræmia—Nephritis—Puerperal Toxæmia.
3. Paralytic Ileus—Obstructed Labour due to Hydrocephalus—Toxæmia of Pregnancy.
4. Post-operative Paralytic Ileus—Toxæmia of Pregnancy.
5. Asphyxia—inhalation of mucus into bronchus during anaesthesia.
6. Acute Toxæmia due to Puerperal Sepsis (outside delivery).
7. Post-partum Hæmorrhage due to retained placenta.

## CITY HOSPITAL, LEEDS ROAD.

REPORT OF THE MEDICAL SUPERINTENDENT,  
H. L. WHITCHURCH BEACH, M.B., B.S.D.P.H.

I have the honour to present the Annual Report for the year ended December 31st, 1946.

## ADMISSIONS TO HOSPITAL.

The total number of admissions during the year was 866, as compared with 1,528 for 1945, 1,667 for 1944 and 1,787 for 1943. This fall of 43% in the total number of admissions was mainly due to the low incidence of diphtheria and scarlet fever, as can be seen from Table 2. The fall in the number of admissions was spread evenly throughout the year. The smallest number of patients under treatment on any one day was 41 on December 24th, and the largest was 110 on January 1st and 3rd.

## 1. TABLE SHOWING NUMBER OF CASES ADMITTED DURING EACH MONTH.

1946 Month	Scarlet Fever			Diphtheria			Other Diseases			Total Admissions		
	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total
January ..	9	15	24	8	11	19	22	24	46	39	50	89
February ..	11	23	34	12	8	20	12	20	32	35	51	86
March ..	12	9	21	5	4	9	17	28	45	34	41	75
April ..	11	13	24	9	13	22	13	24	37	33	50	83
May ..	16	24	40	6	4	10	15	14	29	37	42	79
June ..	10	9	19	2	7	9	13	15	28	25	31	56
July ..	12	12	24	5	6	11	14	36	50	31	54	85
August ..	9	7	16	—	5	5	24	21	45	33	33	66
September ..	9	16	25	6	2	8	16	19	35	31	37	68
October ..	7	12	19	8	6	14	10	18	28	25	36	61
November ..	14	16	30	3	3	6	14	11	25	31	30	61
December ..	14	16	30	2	1	3	12	12	24	28	29	57
Total ..	134	172	306	66	70	136	182	242	424	382	484	866

ANNUAL ADMISSIONS OF CASES OF SCARLET FEVER AND  
DIPHTHERIA. 1937—1946.

2. The following table shows the annual admissions of the above two diseases during each of the preceding ten years :—

	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946
Scarlet Fever ..	604	579	476	164	187	505	850	536	432	306
Diphtheria ..	713	526	266	166	199	200	414	548	466	136

### 1. SCARLET FEVER.

314 patients were admitted to hospital with the diagnosis of scarlet fever, and this was confirmed in 306 cases.

As in previous years the prevalent type of scarlet fever was mild. There were no deaths.

### 3. TABLE SHOWING THE AGE AND SEX INCIDENCE OF PATIENTS.

Age Group	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40+	Totals
Male ..	57	47	17	5	1	2	1	2	2	134
Female ..	59	66	32	3	6	1	3	—	2	172
Totals ..	116	113	49	8	7	3	4	2	4	306

### *Complications.*

4. Complications occurred in 48 patients or in 15·6% of the total number of patients suffering from scarlet fever. One child, only, developed more than one complication. The frequency and percentage incidence of the principal complications is given in the following table :—

Complication	Males		Females		Total	
	No.	Per cent.	No.	Per cent.	No.	Per cent.
Late Adenitis .. .	9	6·7	10	5·8	19	6·2
Rhinitis .. .	3	2·2	1	0·5	4	1·3
Otitis Media .. .	5	3·7	6	3·4	11	3·5
Late Tonsillitis .. .	1	0·7	3	1·7	4	1·3
Septic Skin, etc. .. .	4	2·9	3	1·7	7	2·2
Arthritis .. .	2	1·5	—	—	2	0·6
Albuminuria .. .	—	—	—	—	—	—
Total .. .	24	17·9	23	13·3	47	15·0

Of the total of 306 patients admitted for treatment all received scarlatinal antitoxin, average dose 3,000 units, except 23 patients who were admitted too late in the disease to receive this specific therapy. 14 children were transferred to this hospital from other institutions with a surgical type of scarlet fever, secondary to burns or scalds.

### *Cross infection.*

While under treatment for scarlet fever, two children developed a second disease due to cross infection. In both cases this super added infection was chicken pox. Cross infection with chicken pox is unavoidable in the existing type of scarlet fever ward. The primary source of infection in these two cases was a child who was admitted with scarlet fever but who was at the time incubating chicken pox.

As seen from Table 4, there were also four patients who developed a late secondary tonsillitis, probably due to cross infection with a different type of haemolytic streptococcus from that responsible for the scarlet fever. Again this form of cross infection is unavoidable in a large open ward. There were no secondary attacks of scarlet fever during the year.

### *Concomitant Disease.*

During the year 27 patients were admitted with scarlet fever complicated by concomitant disease, the commonest of which were :—

Scabies	...   ...   ...	5 cases	Impetigo	...   ...	3 cases
Chicken Pox	...   ...	4 cases	Otitis Media	...   ...	3 cases

### *Amended Diagnosis.*

Of the total of 314 patients notified as suffering from scarlet fever the diagnosis was amended after admission in 8 cases, or 2·6%. The confirmed diagnosis of these cases were toxic erythema 5 cases, and one case each of acute tonsillitis, otitis media and infectious mononucleosis.

### *Return Cases.*

There were 3 return cases admitted during the year, i.e. 0·9% of all cases discharged from hospital as free from infection.

### *Duration of Treatment.*

The practice of discharging patients suffering from an uncomplicated attack of the mild type of scarlet fever and who receive antitoxin on admission, 22 days later, has been continued throughout the year.

The average residence of patients in hospital who suffered from a mild uncomplicated attack of scarlet fever was 22·3 days, as compared was 32·2 days, the average length of treatment of those patients in whom complications occurred or were present on admission.

## DIPHTHERIA.

244 patients were admitted during the year notified as suffering from diphtheria, but the diagnosis was only confirmed in 136 cases. This figure shows a considerable drop as compared with the total number of 466 cases of diphtheria admitted during 1945, and enabled two of the diphtheria wards to be closed almost continuously throughout the year.

5. TABLE SHOWING THE AGE AND SEX INCIDENCE OF PATIENTS.

Age Group	0-1	1-2	2-3	3-4	4-5	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40+	Totals
Recovered—M.	1	2	3	8	12	26	15	13	4	3	2	1	—	—	64
Do. F.	—	—	2	2	3	7	24	14	9	10	2	1	—	2	69
Deaths—M. .	—	—	—	1	—	1	—	—	—	—	1	—	—	—	2
Do. F. .	—	—	—	—	—	—	1	—	—	—	—	—	—	—	1
Total ...	1	2	5	11	15	34	40	27	13	13	5	2	—	2	136

This table includes all types of disease, both clinical and bacteriological, which are differentiated in Table 6. From Table 5 it is interesting to note how the age incidence of clinical diphtheria is moving to the higher age groups. Of the total number of cases of all types 45·5% were above the age of 10 years, and only 25% of the number were in the 0-5 years age group. This is most probably due to the increasing number of children of the pre-school age receiving active immunisation against this disease.

6. TABLE SHOWING THE SITE AND TYPE OF DISEASE.

Site of Disease	Clinical Cases						Bacterio-logical Cases		Total Cases	
	Number		% Total		Deaths					
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Fauces .. .. ..	50	49	44·0	43·0	1	1	11	12	62	62
Nose (anterior) .. ..	1	2	0·8	1	—	—	—	—	1	2
Larynx .. .. ..	1	2	0·8	—	—	—	—	—	1	2
Fauces and Nasopharynx .. ..	1	4	0·8	3	1	—	—	—	2	4
Fauces and Larynx .. ..	—	—	—	—	—	—	—	—	—	—
Totals ... ..	53	57	46	50	2	1	11	12	66	70

7. TABLE SHOWING CLINICAL SEVERITY COMPARED WITH  
BACTERIAL TYPE.

Bacterial Type	Clinical Severity								Deaths	T'tals	Mort. Rate Per Cent	
	Bacterial		Mild		Moderate		Severe					
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
C. Diphtheriae Mitis ..	1	5	1	4	1	1	—	—	—	—	13	—
C. Diphtheriae Intermedius ..	7	5	14	14	4	6	6	10	1	—	67	1·4
C. Diphtheriae Gravis ..	3	3	3	3	3	5	3	3	1	1	28	7·1
Diphtheroids (various) ..	—	—	8	3	6	4	4	3	—	—	28	—
Totals ..	11	13	26	24	14	16	13	16	2	1	136	2·2

It is to be noted that the crude mortality rate of all types of diphtheria admitted to the hospital during the year is 2·2%, but if the bacteriological cases are excluded the true mortality rate for all cases of clinical diphtheria is 2·7%.

#### *Laryngeal Diphtheria.*

Only 3 patients were admitted with this form of diphtheria and only one patient required intubation. All patients recovered.

#### *Complications.*

The following table illustrates the frequency of the chief complications that occurred during the year, in relation to the bacterial type :—

8.

Type	Mitis		Intermedius		Gravis		Total	
Complication	M.	F.	M.	F.	M.	F.	M.	F.
Myocarditis .. ..	—	—	2	1	2	1	4	2
Paralysis .. ..	—	—	4	6	4	1	8	7
Albuminuria .. ..	—	—	3	4	4	2	7	6

#### *Return Cases and Cross Infection.*

There were no return cases of diphtheria admitted during the year. Cross infection in the diphtheria wards occurred on 8 occasions, the disease being conveyed in this manner being chicken pox in each case.

### *Concomitant Disease.*

7 patients admitted with diphtheria were also suffering from or incubating the following concomitant infections : chicken pox 2 cases, and one case each of otitis media, chronic pyelitis, acute pyelitis, herpes zoster and broncho-pneumonia.

### *Amended Diagnosis.*

In 108 patients, or 44·2%, of the total number of patients notified as suffering from diphtheria, the diagnosis was not confirmed.

The final diagnosis in these cases were :—

Acute Tonsillitis ... 85 cases      Rhinitis (catarrhal) ... 5 cases

Vincent's Angina ... 11 cases

and one case each of the following diseases : acute conjunctivitis, stomatitis, acute peritonsillar abscess, catarrhal laryngitis, acute bronchitis, influenzal broncho-pneumonia and infectious mononucleosis.

### *Duration of Treatment.*

Only in 10 patients was the disease severe enough to warrant antitoxin being given by the intravenous route. Patients receiving antitoxin by this route are also given large doses of penicillin.

The average duration of all cases completing treatment was 45·3 days.

### *Pertussis.*

During the year 36 children were admitted suffering from whooping cough, 14 being complicated with broncho-pneumonia. Only one patient died, a mortality rate of 2·7%.

### 9. TABLE SHOWING AGE AND SEX INCIDENCE OF PATIENTS.

Age Group		0-½	½-1	1-2	2-3	3-4	4-5	5+	Total
Uncomplicated	M.	2	—	3	2	4	—	2	13
	F.	3	1	3	—	1	1	—	9
Broncho-pneumonia	M.	2	2	1	—	1	1	—	7
	F.	2	—	3	1	—	1	—	7
Totals ..		9 (1)	3	10	3	6	3	2	36 (1)

The figure in parenthesis represents the one fatal case.

### *Measles.*

Only two patients suffering from measles were admitted during the year. Both suffered from uncomplicated attacks and recovered.

### *Erysipelas.*

28 patients were admitted during the year for erysipelas. There were two deaths, one a female patient of 85 years who had recovered from the attack of erysipelas but died as the result of a senile myocarditis, and the other, a man of 64 who was admitted with a severe attack of facial erysipelas, died fifteen hours after admission as the result of a congestive cardiac failure.

10. TABLE SHOWING AGE AND SEX INCIDENCE AND SITE OF DISEASE.

Age Group	Under 30	30-40	40-50	50-60	60-70	70-80	80+	Total	Site	
									Face	Limb
Male ...	3	3	-	-	3 (1)	2	-	11	10 (1)	1
Female ...	1	3	-	7	-	4	2 (1)	17	16 (1)	1
Totals ...	4	6	-	7	3 (1)	6	2 (1)	28	26 (2)	2

The two fatal cases mentioned above are shown in parenthesis.

### DISEASES OF THE CENTRAL NERVOUS SYSTEM :

#### I. *Meningitis.*

(a) *Meningococcal* : Only 7 patients were admitted during the year suffering from meningococcal meningitis. The ages of the male patients were 3, 16 and 53 years, and of the female patients 1, 6, 30 and 47 years. The infant of one year died five minutes after admission to hospital as the result of an acute meningococcal septicæmia. This was the only fatal case among the patients admitted for treatment.

(b) *Pneumococcal* : Two male infants, each four months old, were admitted with primary pneumococcal meningitis. One died sixteen hours after admission but the other made a complete recovery.

(c) *Otitic* : One patient of 17 years of age was admitted with an otitic meningitis and was transferred to another hospital for the necessary surgical treatment.

#### 11. *Acute Anterior Poliomyelitis.*

Three patients, all females, aged 4, 13 and 25 years, were admitted during the year. All were transferred after the termination of the acute stage to another hospital for the necessary physiotherapy.

### III. *Acute Polioencephalitis.*

A boy aged 2 years and a man aged 37 were admitted suffering from acute polioencephalitis and both died.

## DISEASES OF THE GASTRO-INTESTINAL TRACT :

### I. *Enteric Fever.*

(a) *Typhoid Fever*: Only two cases of typhoid fever were under treatment during the year, a boy of 14 years and a female of 69 years. The latter patient's death was due to a pre-existent congestive heart failure accelerated by the toxæmia of the disease.

(b) *Paratyphoid Fever*: 15 patients were admitted during the year suffering from paratyphoid B. fever. 8 of these cases were admitted by arrangement with the Halifax Health Department. One patient was a nurse who developed the disease and who had been nursing these patients. One patient died, a boy of 4 years of age, whose death was due to a post infective polioencephalitis.

### II. *Bacillary Dysentery.*

33 patients, 9 males and 24 females, were admitted during the year with bacillary dysentery, due to the Sonne bacillus in 31 cases and 2 which were of the Flexner type. 13 of the female patients were transfers from another hospital. All recovered.

### III. *Acute Gastroenteritis.*

13 patients were admitted with acute gastroenteritis of a very severe type. 6 patients died; all were under the age of 7 months.

### IV. *Infective Hepatitis.*

9 males and 5 females were admitted during the year with mild attacks of infective hepatitis.

## THORNTON SMALL POX HOSPITAL.

No case of small pox or suspected small pox occurred during the year, so the hospital remained closed.

## SICKNESS OF NURSING STAFF.

The health of the staff was good apart from a certain degree of minor illness. One nurse contracted paratyphoid B. fever, and another suffered from scarlet fever.

## BACTERIOLOGICAL DEPARTMENT.

I. Examinations for *C. Diphtheriae*.

Primary culture for <i>C. Diphtheriae</i>	...	...	2,940
---	-----	-----	-------

## Typing of primary cultures :—

C. diphtheriae gravis	...	...	23
do. intermedius	...	...	75
do. mitis	...	...	9
B. Hoffman	...	...	30
B. Xerosis	...	...	6
Other diphtheroids	...	...	29
			—
Total		172	—

## II. Miscellaneous Specimens.

Direct Smear Fauces	...	...	44
Urine, chemical, sytological, etc.	...	...	34
Cerebro-Spinal Fluid	...	...	21
Direct Smear—Conjunctive	...	...	10
Blood Count	...	...	3
Sputa for T.B.	...	...	2
Direct Smear—Wound	...	...	1
Blood Film for Malarial Parasites		1	—
			—
Total		116	—

## III. Total Number of Specimens Examined.

The total number of specimens examined in the hospital laboratory was 2,940, as compared with 6,326 for 1945 and 7,655 for 1944.

SUMMARY OF ALL CASES TREATED IN THE CITY HOSPITAL, BRADFORD,  
DURING THE YEAR 1946.

Disease.		Total Number of Cases.	Deaths.
<i>1. Acute Infectious Diseases.</i>			
Chicken Pox	...	11	—
Diphtheria	...	136	3
Dysentery (bacillary)	...	33	—
Enteric Fever	...	17	2
Erysipelas	...	28	2
Gastroenteritis	...	13	6
Hepatitis (Infective)	...	14	—
Infectious Mononucleosis	...	2	—
Measles	...	2	—
Meningitis (meningococcal)	...	7	1
Mumps	...	2	—
Ophthalmia Neonatorum	...	12	1
Pemphigus Neonatorum	...	10	—
Polioencephalitis (acute)	...	2	2
Poliomyelitis (acute)	...	3	—
Puerperal Pyrexia	...	14	—
Rubella	...	2	—
Scarlet Fever	...	306	—
Whooping Cough	...	36	1
<i>2. Diseases of Ear, Nose and Throat.</i>			
Laryngitis (catarrhal)	...	2	—
Oedema of Epiglottis	...	1	—
Otitis Media	...	1	—
Peritonsillar Abscess	...	1	—
Rhinitis	...	6	—
Tonsillitis (acute)	...	93	1
Vincent's Angina	...	15	—

*Total Number*

<i>Disease.</i>	<i>Total Number of Cases.</i>	<i>Deaths.</i>
-----------------	-----------------------------------	----------------

3. *Diseases of Respiratory System.*

Bronchitis (acute) ... ...	6	...	—
Broncho-pneumonia ...	4	...	2
Influenza ... ...	4	...	—
Lobar Pneumonia ... ...	1	...	1
Pleural Effusion ... ...	1	...	—
Pulmonary Tuberculosis ...	1	...	—

4. *Diseases of Central Nervous System.*

Meningism ... ...	2	...	—
Meningovascular Syphilis ...	1	...	—
Otitic Meningitis ... ...	1	...	—
Pneumococcal Meningitis (primary)	2	...	1
Post Diphtheritic Polyneuritis	2	...	—
Subarachnoid Hæmorrhage ...	1	...	—

5. *Diseases of Alimentary System.*

Acute Enteritis ... ...	14	...	—
Cholecystitis (chronic) ...	1	...	—
Colitis (acute) ... ...	1	...	—
Intussusception ... ...	1	...	—
Stomatitis ... ...	1	...	—

6. *Diseases of the Skin.*

Herpes Zoster ... ...	1	...	—
Mepacrine Pigmentation ...	1	...	—
Papular Urticaria ... ...	4	...	—
Scabies ... ...	2	...	—
Toxic Erythema ... ...	5	...	—

<i>Disease.</i>		<i>Total Number of Cases.</i>		<i>Deaths.</i>
7. <i>Miscellaneous.</i>				
Adenitis (preauricular)	...	1	...	—
Angioneurotic Oedema	...	1	...	—
Conjunctivitis (acute)	...	1	...	—
Cystitis (acute)	...	1	...	—
Marasmus	...	1	...	1
Pelvic Peritonitis	...	1	...	—
Purpura Simplex	...	1	...	—
Pyelitis (acute)	...	1	...	—
Rheumatism (acute)	...	3	...	1
Admitted with mother	...	11	...	—
Admitted with baby	...	13	...	—
No evidence of disease	...	5	...	—
		—		
Total	866	...	25	—
	—			

## VIII.—HOUSING.

(1) *New houses during 1939-1946.* The average number of new houses certified fit for human habitation annually during the five years preceding 1927 was 1,043, and the following statement shows the number so certified each year since then :—

Year	New Houses	Year	New Houses	Year	New Houses	Year	New Houses
1927	2,069	1932	1,129	1937	1,650	1942	4
1928	1,927	1933	1,141	1938	1,801	1943	3
1929	958	1934	1,455	1939	1,351	1944	3
1930	508	1935	1,524	1940	338	1945	16
1931	604	1936	1,468	1941	19	1946	314
1927-31	1,213 (average)	1932-36	1,343 (average)	1937-41	1,032 (average)	1942-46	68 (average)

The number of new houses built during the past 15 years in each Ward and certified as fit for human habitation in accordance with the Bradford Waterworks and Improvement Act, 1871, is shown in the table on the following page.

During the period the Corporation erected 11 houses and 6 single-room dwellings on the Canterbury Avenue Estate, and 10 houses on the Birksland Street Estate.

During 1946 the Corporation's programme of temporary house-building was commenced, and 242 bungalows were completed, including 82 on the Eccleshill (North) Estate, 54 on the Clayton Housing Site, 55 at Broomfields, 35 at Odsal and 16 on the Buttershaw Housing Estate.

The total number of new houses built in the City during the 20 years ended 31st December 1946 was 18,282; 5,833 of these houses have been built by the Local Authority with State Assistance; 2,764 houses were built by private enterprise with the aid of the Government subsidy; and 9,685 houses were built by private enterprise without State assistance. In addition 68 houses and shops were built by the Local Authority without State assistance.

The type and accommodation of the houses built by the Local Authority, together with their locality, are set out in the table on page 122.

## NEW BUILDINGS.

*Showing number of New Buildings certified as fit for habitation in each of the Wards, and in the whole City, during the years 1931-46.*

WARDS		1931	1932	1933	1934	1935	1936	1937	1938	1939	1940-45	1946
Allerton	...	147	681	59	80	126	121	54	33	35	10	4
Bolton	...	23	55	71	95	81	41	152	67	82	16	4
Bradford Moor	...	10	40	36	72	195	92	1	20	—	—	—
Clayton	...	33	34	461	111	76	61	36	40	41	5	58
East Bowling	...	6	3	—	5	13	52	70	28	54	47	55
Eccleshill	...	58	59	34	33	46	127	158	172	148	16	82
Exchange	...	—	1	1	8	117	4	24	45	—	—	—
Great Horton	...	63	58	97	116	108	123	105	61	73	13	21
Heaton	...	14	4	21	24	19	28	31	56	50	13	14
Idle	...	47	13	33	19	46	92	84	87	30	41	2
Listerhills	...	1	—	—	—	—	—	—	12	6	—	—
Little Horton	...	—	2	10	19	21	8	320	504	354	90	2
Manningham	...	—	—	7	14	48	108	6	10	12	3	—
North East	...	—	3	15	97	26	17	16	15	25	—	—
North Bierley East	14	52	55	72	53	29	49	42	26	—	—	—
North Bierley West	48	77	81	210	260	262	216	231	168	60	53	—
South	...	—	—	3	8	12	17	—	112	10	28	10
Thornton	...	8	11	36	103	90	98	74	75	64	23	2
Tong	...	10	17	82	324	52	68	66	50	51	9	4
West Bowling	...	20	19	39	45	135	120	188	141	122	9	3
City Total	...	504	1129	1141	1455	1524	1468	1650	1801	1351	383	314

(2) *Overcrowding.* Many very serious cases of overcrowding continue to come to the knowledge of the department during the period, but there still remains a great scarcity of housing accommodation, which complicates the position. On the 31st December, 1946, the number of applicants for new houses was approximately 11,829; approximately 4,200 of whom were living in apartments.

## TYPES OF HOUSES BUILT BY THE LOCAL AUTHORITY.

1920 to 1946.

Site	Non-parlour 4 bed- rooms	Parlour and 4 bed- rooms	Parlour and 3 bed- rooms	Non- parlour 3 bed- rooms	Non- parlour 2 bed- rooms	Houses for aged persons	Flats	Total	Houses and Shops
Odsal ..	—	—	28	386	40	—	—	454	4
Thornbury ..	—	—	20	130	16	—	—	166	2
Bradford Moor ..	—	12	114	468	74	—	—	668	12
Scholemoor ..	—	10	122	360	12	—	—	504	6
Thackley ..	—	—	—	58	—	—	—	58	—
Eccleshill ..	—	—	120	718	40	—	—	878	6
Shirley Manor ..	—	—	—	350	—	—	—	350	4
Chellow Grange ..	—	—	52	674	44	—	—	770	—
Bierley ..	—	—	50	814	—	49	—	913	16
Thornton ..	—	—	100	200	20	—	—	320	—
Swain House ..	—	—	32	654	52	—	—	738	8
Lower Grange ..	—	—	68	718	30	40	—	856	8
Whetley Lane ..	—	—	—	180	36	24	156	396	—
Greengates ..	—	—	—	40	—	—	—	40	—
Musgrave Road ..	—	—	—	42	—	—	—	42	—
White Abbey ..	16	—	—	58	—	36	124	234	—
Low Moor ..	—	—	—	22	—	—	—	22	—
Idle ..	—	—	—	86	—	—	—	86	—
Woodhall Place ..	—	—	—	6	—	—	—	6	—
Clayton ..	—	—	1	73	—	20	—	94	—
Longlands ..	—	—	—	—	—	—	66	66	—
Canterbury ..	—	—	—	—	—	—	—	—	—
Avenue ..	120	—	—	669	280	182	—	1,251	2
Gibson Street ..	6	—	—	62	—	24	—	92	—
North Wing ..	3	—	—	9	—	24	—	36	—
Birkslane Street ..	12	—	—	20	—	—	—	32	—
Broomfields ..	8	—	—	36	—	16	—	60	—
Totals ..	165	22	707	6,833	644	415	346	9,132	68

TEMPORARY BUNGALOWS BUILT BY THE LOCAL AUTHORITY  
DURING 1946.

Eccleshill (North) ..	...	82
Broomfields ..	...	55
Clayton (East) ..	...	54
Odsal ..	...	35
Buttershaw ..	...	16
		—
Total ..	242	—

## HOUSING STATISTICS, 1946.

Total number of new houses erected during the year ...	...	...	...	314
(i) By the Local Authority ...	...	...	...	269
(ii) By other Local Authorities ...	...	...	...	—
(iii) By other bodies and persons ...	...	...	...	45
<b>—Inspection of dwelling-houses during the year:—</b>				
(1) (a) Total number of dwelling-houses inspected for housing defects (under Public Health or Housing Acts) ...	...	...	...	9,508
(b) Number of inspections made for the purpose ...	...	...	...	32,180
(2) (a) Number of dwelling-houses included under sub-head (1) above which were inspected and recorded under the Housing Consolidated Regulations, 1925 ...	...	...	...	495
(b) Number of inspections made for the purpose ...	...	...	...	3,753
(3) Number of dwelling-houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation ...	...	...	...	188
<b>II—Remedy of Defects during the year without service of formal Notices:—</b>				
Number of defective dwelling-houses rendered fit in consequence of informal action by the Local Authority or their officers ...	...	...	...	953
<b>III—Action under Statutory Powers during the year:—</b>				
A. Proceedings under Sections 9, 10, and 16 of the Housing Act, 1936:—				
(1) Number of dwelling-houses in respect of which notices were served requiring repairs ...	...	...	...	...
(2) Number of dwelling-houses which were rendered fit after service of formal notices:—				
(a) By owners ...	...	...	...	...
(b) By Local Authority in default of owners ...	...	...	...	23
B. Proceedings under Public Health Acts:—				
(1) Number of dwelling-houses in respect of which notices were served requiring defects to be remedied ...	...	...	...	3,058
(2) Number of dwelling-houses in which defects were remedied after service of formal notices:—				
(a) By owners ...	...	...	...	...
(b) By Local Authority in default of owners ...	...	...	...	301
C. Proceedings under Section 11 of the Housing Act, 1936:—				
(1) Number of dwelling-houses in respect of which demolition orders were made ...	...	...	...	166
(2) Number of dwelling-houses demolished in pursuance of demolition orders ...	...	...	...	265
(3) Number of dwelling-houses demolished by owners in pursuance of scheme under Section 11 of the Housing Act, 1936	...	...	...	—
(4) Number of dwelling-houses in respect of which undertakings were given that houses would not be used for human habitation	...	...	...	6
(5) Number of dwelling-houses in respect of which undertakings were given that houses would be rendered fit for human habitation ...	...	...	...	2
(6) Number of dwelling-houses in respect of which undertakings were complied with to the satisfaction of the Local Authority	...	...	...	1

## IX.—MISCELLANEOUS.

## (B) GENERAL DENTAL WORK.

DENTAL CLINIC, 22 EDMUND STREET.

REPORT OF THE DENTAL OFFICER, H. P. SHOESMITH, L.D.S.

I have the honour to present the annual report for the year ended December 31st, 1946.

The dental work carried out under the auspices of the City of Bradford Health Committee has followed the same procedure as in previous years. Those people entitled to participate in the scheme continue to attend in large numbers and appear to appreciate the efforts made to put their mouths in order.

This applies especially to patients from the Maternity Centres who realise that by having dental treatment their own health will benefit and their children will have a better chance of growing up healthy citizens.

The actual work performed has been carried out as painlessly as possible, all extractions being done under a general or local anæsthetic, and injections in the gums prior to preparation of the tooth for filling if thought desirable.

A number of school children have been treated for irregularities of the teeth, and a large measure of success in the final result has been attained.

The various institutions under the authority of the Committee have been visited when necessary. Westwood Institution in particular has been visited once a month for the last year, and great progress has been made in reducing the arrears of work which had accumulated because of the dispersal of the inmates during the war years.

The staffs of the various institutions have been most helpful and I wish to thank them.

In conclusion may I express my deep appreciation of the long years of service of my nurse, Miss French.

(Signed) H. P. SHOESMITH.

TABLE SHOWING WORK CARRIED OUT AT THE DENTAL CLINIC DURING THE YEAR

Source	Number of Patients	Number of Patient's Visits	Temporary Teeth Extracted	Temporary Teeth Filled	Permanent Teeth Extracted	Permanent Teeth Filled	Other Operations					
							Dentures Repairs, etc.	Scalings	Anaesthetics	Root Cases	Dressings	Crowns and Regs.
St. Luke's Hospital	175	356	6	—	619	71	22	42	49	11	56	—
Tuberculosis Scheme	181	181	16	2	170	43	16	9	3	1	11	—
Maternity ..	462	1,385	—	—	1,646	173	72	152	318	7	111	—
Infants and Young Children	364	416	433	32	—	—	—	—	344	—	14	—
School Children ..	22	117	2	—	—	—	—	6	—	—	—	13
Mental Institutions	232	387	13	4	197	133	168	20	5	—	16	—
Social Welfare ..	63	124	—	—	79	—	8	38	6	—	6	—
Totals ..	1,499	2,966	470	38	2,711	420	286	267	725	19	214	13

### (C) AMBULANCE SERVICE AND DISINFECTION.

The Municipal Ambulance Service came into operation on the 1st April, 1946. Ambulances were withdrawn from the various hospitals, institutions and sanatoria and centralised at the Ambulance Station in Sugden Street, Bradford. The unification of all the ambulance work under one central control has made for increased efficiency and a far speedier operational performance. During the period 1st April to 31st December, 1946, 7,335 cases were dealt with; details are as set out below :—

Midwives	...	...	...	...	108
Social Welfare Cases	...	...	...	...	360
Infectious Diseases	...	...	...	...	631
Accident Cases	...	...	...	...	1,414
All Other Cases	...	...	...	...	4,822
					—
Total				7,335	—

The total numbers of articles and houses disinfected by the Disinfecting Staff during the period under review are shown in the following table :—

	1940	1941	1942	1943	1944	1945	1946
Number of Houses Disinfected ..	1,099	1,500	2,491	3,573	2,871	2,364	1,817
Number of Articles Disinfected ..	9,177	9,084	13,628	14,631	19,220	19,897	13,593

### (D) PUBLIC MORTUARY AND CREMATORIUM.

During the past year 303 bodies have been deposited and 283 post-mortem examinations made in the Public Mortuary. Since the opening in October, 1910, 3,846 bodies have been deposited.

The remains of 1,172 persons were cremated during 1946 at the Scholemoor Crematorium, in comparison with 1,003 during the previous year.

## APPENDIX.

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TABLE I.  
VITAL STATISTICS OF WHOLE DISTRICT DURING 1946 AND PREVIOUS YEARS.

Y.E.A.R.	BIRTHS.		TOTAL DEATHS REGISTERED IN THE DISTRICT.		TRANSFERABLE DEATHS.		NETT DEATHS BELONGING TO THE DISTRICT.	
	Population estimated to Middle of each Year.	Un-corrected Numbers.	NETT.		Number.	Rate.	of Non-residents registered not in the registered District.	Under 1 Year of Age.
			Number.	Rate.				
1940	271,700	3862	3685	12.81	4937	18.17	545	165
1941	270,310	3721	3551	12.35	4679	17.31	608	189
1942	264,800	4175	3977	13.9	4118	15.55	510	215
1943	260,300	4345	4157	14.46	4343	16.68	376	183
1944	261,890	4823	4645	16.15	4230	16.16	447	151
1945	262,660	4313	4136	15.84	4169	15.87	423	156
1946	279,040	5871	5404	19.39	4319	14.46	471	135
							265	49
							4035	14.4

TABLE II.  
CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE YEAR 1946.

NOTIFIABLE DISEASE	CASES NOTIFIED IN WHOLE DISTRICT										TOTAL CASES NOTIFIED IN EACH LOCALITY									
	At All Ages—Years					At All Ages					West Bowline					Tongue				
	Under 1	1-5	6-10	11-15	16-25	26-35	36-45	46-55	56-65	66-75	76-85	86-95	96-105	106-115	116-125	126-135	136-145	146-155	156-165	166-175
Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Erysipelas	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal Pyrexia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cerebro-Spinal Meningitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poliomyelitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ophthalm. Neonatorum	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
German Measles	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Whooping Cough	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chicken Pox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pulmonary Tuberculosis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other forms of Tuber- culosis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Infective Enteritis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Anthrax	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Polio-encephalitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Encephalitis Lethargica	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pneumonia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malaria	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dysentery	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>TOTALS</b>	3457	223	1357	1241	189	226	145	76	73	140	202	96	213	138	231	178	148	91	203	245

TABLE III.  
THE CAUSES OF DEATH AT DIFFERENT PERIODS OF LIFE DURING THE YEAR 1946.

TABLE IV.

INFANT MORTALITY, 1946. NETT DEATHS FROM STATED CAUSES  
AT VARIOUS AGES UNDER 1 YEAR OF AGE.

CAUSES OF DEATH.	Under 1 week.		1-2 weeks.		2-3 weeks.		3-4 weeks.		Total under 1 month.		1-3 months.		3-6 months.		6-9 months.		9-12 months.		Total Deaths under 1 year.	
	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chicken-pox ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Measles ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Scarlet Fever ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Whooping Cough ...	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	1	—	1	—	3
Diphtheria and Croup ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
Erysipelas ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tuberculous Meningitis ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tuberculosis of Intestines and Peritoneum ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Tuberculous Diseases ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Meningitis ( <i>not Tuber-</i> <i>culous</i> ) ...	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	1
Convulsions ...	—	—	—	—	—	—	—	1	—	1	—	1	2	—	—	—	—	—	—	4
Laryngitis ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Bronchitis ...	—	—	—	—	—	—	—	—	—	—	3	—	1	—	—	—	—	—	—	4
Pneumonia (all forms) ...	1	—	4	—	1	—	3	—	9	13	11	—	3	—	—	2	—	—	—	38
Diarrhoea and Enteritis ...	—	—	—	—	1	—	—	—	—	1	9	8	—	6	—	1	—	—	—	25
Gastritis ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Syphilis ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Rickets ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Suffocation, overlying ...	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	1
Injury at birth ...	10	—	1	—	—	—	—	—	11	—	1	—	—	—	—	—	—	—	—	12
Atelectasis ...	8	—	3	—	—	1	—	12	—	1	2	—	—	—	—	—	—	—	—	15
Congenital Malforma-	—	—	—	—	33	8	2	4	47	5	4	—	1	—	—	—	—	—	—	57
Premature Birth ...	66	—	2	—	—	2	—	2	72	5	3	—	—	—	—	—	—	—	—	80
Atrophy, Debility and Marasmus ...	—	—	—	—	1	—	1	—	2	3	1	—	—	—	—	—	—	—	—	6
Other Causes ...	3	—	—	—	—	1	—	1	5	4	5	2	—	2	—	2	—	—	—	18
All Causes ...	122	19	7	12	160	46	39	14	6	265	—	—	—	—	—	—	—	—	—	—

Nett Births in the year—Legitimate, 4978; illegitimate, 426.

Nett Deaths in the year—Legitimate infants, 235; illegitimate infants 30.

TABLE V.  
PUBLIC HEALTH (TUBERCULOSIS) REGULATIONS, 1930.  
Summary of Notifications during the period from 1st January, 1946, to the 31st December, 1946.

# COMMITTEES

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## HEALTH AND HOUSING COMMITTEE

THE RIGHT HONOURABLE THE LORD MAYOR.

*Chairman*—COUNCILLOR A. WALKER.

*Deputy Chairman*—COUNCILLOR N. FIENBURGH.

Alderman W. H. Barraclough	Councillor W. Donoghue
” D. Black	” R. J. Dykes
” F. V. Butler	” B. Galloway
” W. Leach	” E. V. Heaton
” J. F. McHugh	” G. A. Hirst
” A. Rhodes	” T. Keighley
” L. F. W. S. Smith	” J. Lennon
” H. J. Wilson	” W. A. Ross
Councillor E. Allen	” E. Tennant

## JOINT EDUCATION AND HEALTH AND HOUSING SUB-COMMITTEE (For Medical Services)

*Chairman*—COUNCILLOR A. WALKER.

*Deputy Chairman*—COUNCILLOR N. FIENBURGH.

Alderman F. V. Butler	Mrs. Leach
” W. Leach	Mrs. Briggs
Councillor J. Backhouse	
” W. A. Ross	

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CITY OF BRADFORD

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ANNUAL REPORT  
OF THE  
SCHOOL MEDICAL  
OFFICER

1946



CITY OF BRADFORD EDUCATION COMMITTEE  
**School Health Service Report 1946**

School Population: 40,000

STAFF

*School Medical Officer:* J. DOUGLAS, M.D., D.P.H.

*Chief Assistant School Medical Officer:* V. H. ATKINSON, M.B., D.P.H.

*Assistant School Medical Officers:*

P. VIEYRA, M.D., D.P.H.

DORIS M. LANGLEY, M.B., D.P.H.

C. A. BOTWOOD, M.D.

J. D. BRYAN, M.B., D.P.H.

*Specialist Officers:*

*Ophthalmic Surgeon:* W. O. LODGE, M.D., F.R.C.S.

*Laryngologist and Aurist:* W. APPLEYARD, B.S., L.R.C.P., F.R.C.S.

*Orthopaedic Surgeon:* A. NAYLOR, F.R.C.S.

*School Dental Surgeons:*

H. V. MORRELL, L.D.S., R.F.P.S.

S. HALL, L.D.S.

\*M. FEATHERMAN, L.D.S., R.C.S.

†A. MORTIMER, L.D.S.

*Child Guidance Clinic:*

*Psychiatrist:* H. EDELSTON, M.B., D.P.M.

(3 sessions per week)

*Educational Psychologist:* Miss M. A. MELLONE, B.A., B.Ed., Ph.D.

*Psychiatric Social Worker:* †Mrs. M. TICKLE

*Physiotherapists:*

Miss K. E. HUTTON (at Central Clinic)

Miss E. M. MORRIS }  
 Miss V. M. CRIBB } (at Lister Lane Special School)

*School Nurses:*

C. ROBSON, S. COULTHARD, E. M. BENTLEY, J. McCARTHY, E. COLLEY,  
 K. HEINEMAN, M. H. GRAHAM, D. O'CONNOR, C. M. HAMILTON, N.  
 LANCASTER, F. A. REDFERN, M. KAY, N. CROSSLAND, M. VAN  
 ZWANENBERG

*Speech Therapist:* Miss M. REED

The Statistical Summary of the findings of medical inspection and treatment provided during 1946, the 39th year, has been given in the Ministry of Education Return. The continuous health survey outlined in earlier reports was maintained; drives were undertaken to detect cases of uncleanliness, subnutrition and skin defects; teachers co-operated by referring suspected children to the medical officers. There was a cessation of tonsil and adenoid operations which Mr. Appleyard previously performed at the average rate of 400 per annum. Some of the accumulating cases had surgical treatment at St. Luke's Municipal Hospital, others at the Eye and Ear Hospital. The Committee of the latter Voluntary Hospital made financial representations to the Local Education Authority which are still under consideration. Habitual mouth breathing was corrected by exercises at the Remedial Department of the Central Clinic where the Physiotherapist's cases during the year were classified, viz.:—

Foot deformities	..	..	..	..	130
Kyphosis	..	..	..	..	77
Scoliosis	..	..	..	..	8
Asthma	..	..	..	..	22
Chest deformities	..	..	..	..	8
Genu valgum	..	..	..	..	14
Cerebral palsy	..	..	..	..	2
Sprains	..	..	..	..	2

The total number of louse infestations discovered by school nurses conducting 73,672 examinations during the year was 4,424. The term "uncleanliness" is ambiguous when it covers both dirt and lousiness. We insist that the latter condition is proved by finding one or more nits; usually the whole household is affected. It is regretted that so many nurse hours are absorbed by this persistent problem; ignorance can no longer be advanced as an excuse. Copies of two cards, the second being more urgent, describing the method of removing nits were distributed to parents; Sacker steel combs are recommended but too few are available.

Periodic medical inspections were arranged to include the age groups required by the 1945 Regulations. In order to relieve Head Teachers of a certain amount of preliminary work a clerk was appointed in 1946 to assist with the routine arrangements. This lady is responsible for the preparation of the lists of children to be examined, writing the notices to parents inviting them to the inspection, and the filling in of particulars, previously entered by teachers, on the medical schedules prior to the doctor's visit. This arrangement has been welcomed by the teaching and medical staffs alike and is to be continued. As a further improvement it is suggested that each child's medical inspection be uniformly recorded in a column in the School's attendance register.

The tables below give an analysis of the periodic inspections:—

1. No. of Inspections:—

Entrants .. .. .. .. ..	3,333
Second Age Group .. .. .. .. ..	2,976
Third Age Group .. .. .. .. ..	2,117
Other Routine Inspections .. .. .. .. ..	1,688
Total .. .. .. .. ..	10,114

2. Defects found:—

Defect or Disease	Number of Defects	
	Requiring Treatment	To be kept under observation
Skin .. .. .. .. ..	307	2
Eyes: (a) Vision .. .. .. .. ..	479	317
(b) Squint .. .. .. .. ..	118	111
(c) Other .. .. .. .. ..	102	4
Ears: (a) Hearing.. .. .. .. ..	20	12
(b) Otitis Media .. .. .. .. ..	32	2
(c) Other .. .. .. .. ..	19	3
Nose or throat .. .. .. .. ..	743	582
Speech .. .. .. .. ..	33	38
Cervical Glands .. .. .. .. ..	121	244
Heart and Circulation .. .. .. .. ..	611	189
Lungs .. .. .. .. ..	221	6
Orthopædic: Rickets .. .. .. .. ..	44	25
Spinal Curvature .. .. .. .. ..	61	4
Other Forms .. .. .. .. ..	396	161
Nervous System: Epilepsy .. .. .. .. ..	1	6
Other .. .. .. .. ..	185	10
Other Defects and Diseases .. .. .. .. ..	324	133
Minor Ailments .. .. .. .. ..	68	1

There is no clinical evidence that children's nutrition deteriorated in this comparison with 1936, viz.:—

	A (Excellent) %	B (Normal) %	C (Slightly Subnormal) %	D (Bad) %
1946 .. .. ..	19.8	78.6	1.6	.00
1936 .. .. ..	20.1	76.5	3.3	.00

During the year 1,863,549 meals were supplied to school children. The percentage of school children receiving dinners on specified days was as follows:—

7/2/46	4/6/46	8/10/46
23.2	23.9	25.6

August 1946 saw the commencement of free milk for all school children.

The evidence of functional posture defects, especially among older girls, remained high, some were correlated with late hours, others were associated with myopia. Selected cases attended the Central Clinic twice weekly for graduated exercises.

Small outbreaks of Scalp Ringworm occurred sporadically, the diagnosis being confirmed with a Wood's lamp and microscope. Efficient treatment by X-ray epilation was given at the Skin Department of St. Luke's Hospital.

Six Nursery Schools and Nursery Classes were assigned to each Assistant School Medical Officer for the close supervision of every factor affecting healthy development of young children, emphasis being laid on the highest possible standard of all-round cleanliness. Meals were supplemented by the free issue of concentrated orange juice and cod liver oil; ferrous sulphate tablets were also given when medically advised. There was a gratifying freedom from enteritis and other infections. Many mothers who left their children in Nurseries as a war-time expedient so appreciated the benefits that they continued the practice.

No school in the City was closed on account of any epidemic disease.

The ascertainment of temporarily educationally subnormal children was mainly undertaken by the whole-time Psychologist. Two new Senior Tutorial Classes were opened, a boys' at Lapage Street School and a mixed at Clayton. There is a widespread pressing need for small transition classes where backward children old enough to leave the Infants' Departments can acquire confidence and the elementary reading ability required in Junior Departments.

Earlier ascertainment of all handicapped children was encouraged. The Margaret McMillan School provided special instruction in ten classes for 165 educationally sub-normal pupils. A nursery class was formed for children whose mental ages approximate to 4 years though their chronological ages are about 7 years; a new Nursery Assistant shared in their play as well as helping with social training, washing, distributing milk, etc. The building of a canteen within the premises was started in July 1946. The resident E.S.N. group, rearguard of our evacuees, finally returned from Cottingley Manor to the City. The magnitude of billeting can be recollected by noting that these 12 girls and 27 boys now living in Odsal House require three teachers, one matron, one assistant matron, two cooks, three attendants and one seamstress.

Lister Lane School also catered for an increased number of Physically Handicapped children. The most dependent were transported by three ambulances which made single journeys each morning and afternoon. The Limb Fitting Centre of the Leeds Ministry of Pensions Hospital extended its export resources to four young amputees. A Centrosal lamp was installed enabling twelve children to have ultra violet ray treatment simultaneously. Mr. Naylor, the Orthopædic Surgeon, was succeeded by Mr. Dick; together they paid thirty-six weekly visits, and operated upon seven pupils in hospital.

Bolton Royd increased the number of deaf children on roll by four to fifty-four of whom thirty-six had some educable hearing. The scholars were graded according to age if possible but prime consideration was given to hearing ability, amount of natural speech and general educational background. Five classes were maintained, namely, Infant, Junior and Intermediate Deaf; Junior and Senior Partially Deaf. In the Deaf Classes emphasis was placed on voice production and language development leading up to academic subjects. The work in Partially Deaf classes corresponded more with the ordinary school curriculum, though constant attention was paid to the correction of defective speech and to the acquisition of accurate lip reading. As no pupil left under sixteen years of age handicraft training was a popular feature. The senior boys did woodwork every Friday and boot repairing on alternate Tuesday afternoons; senior girls practised cookery and housecraft every Monday, needlework on Tuesday and Friday afternoons. The Lipreading Class, whose inauguration was previously described, continued at the Central Clinic on Mondays. A Bolton Royd teacher met 8 moderately deaf children from ordinary schools at 4 p.m.; they attended fairly regularly and made appropriate progress. A younger class starting at 3 p.m. lasted a few weeks only because parental escorts could not be guaranteed; two of the juniors were recruited to Bolton Royd.

The premises and organisation of Linton Camp School were described previously. Experience gained during five years care of war evacuees was a valuable asset when in 1945 it became a Residential Open Air School. The admission of children younger than nine years is not recommended except where home circumstances are unsuitable. The following table shows the age distribution:—

Years	Number
6—7	3
7—8	30
8—9	30
9—10	33
10—11	30
11—12	31
12—13	30
13—14	20
14 plus	6
6—14 plus	Total 213

Many of the delicate entrants needed extra attention to their nutrition; an assistant nurse was appointed in April.

The average number of cases in bed during the year was .. . . . . . . .	8
The average number of cases treated daily at the clinic .. . . . . . . .	31
Number of accidents .. . . . . . . .	5
Number of operations .. . . . . . . .	2
Number of chicken pox patients .. . . . . . . .	4
Number of mumps patients .. . . . . . . .	7
Number of whooping cough patients .. . . . . . . .	2
Number of ringworm patients .. . . . . . . .	7
Number of request visits by Dr. Donaldson .. . . . . . . .	34

Many intermittent cases of nocturnal enuresis cleared completely with all round benefit in personality. Of the seven children admitted because of frequent asthma in Bradford, six seldom had any attacks during their stay at Linton.

Work in the Dental Department was maintained during most of 1946 by a skeleton team of only two dental surgeons who endeavoured to cope with the inspection and treatment of 40,000 school children. It is the more regretted that this inadequate ratio of personnel does not allow an effective preventive scheme since parents are now showing a much greater interest in dental care, and appreciation of completed treatment. A number of "casual" cases attended the Clinic daily without appointment, usually because of toothache; the amount of time required for their treatment impeded the routine programme. The following arranged inspections were completed during 1946:—

## 7,301 Routine Inspections in Elementary Schools;

### 3,180 Special Inspections at the Central Clinic;

### **383 Special Inspections, Secondary School Children;**

85 Special Inspections, children in attendance at Special Schools;

## 8 Special Inspections, Nursery School children.

Of those 6,909 required treatment, while 6,290 actually were treated; this high acceptance rate reflects credit to all concerned. Nitrous oxide anaesthesia was administered in 4,315 cases, the remaining extractions were completed under local anaesthetic. Every opportunity was taken to propagate habits of dental hygiene, e.g. short addresses when making school inspections and talks during treatment sessions. 2,080 fillings were made, 2,030 in permanent teeth and 50 in temporary.

The Child Guidance Clinic investigated 152 maladjusted children, an increase of 28, who had been referred by various agents as in previous years. The cases were classified according to main symptoms, viz.:—

Anti-social aggressive behaviour .. ..	16
Stealing .. .. ..	26
Anti-social evasive behaviour .. ..	21
Fears and anxieties .. .. ..	20
Habit disorders .. .. ..	9
Nervous disorders .. .. ..	6
Retardation .. .. ..	26
Miscellaneous School Problems .. ..	20
Miscellaneous .. .. .. ..	5

Dr. Edelston suggested that some preliminary psychiatric screening might be applied to juvenile delinquents by one or more suitably trained probation officers; and expressed satisfaction because teachers are becoming aware that the "too good" withdrawn child may need psychotherapy as much as his troublesome opposite. The value of group treatment was again evident. It facilitates the introduction of a new case for observation, also removal for individual attention at any critical stage; it often shortens treatment because many children release their feeling sooner with other similar youngsters around than when alone with an adult. The need was expressed for an adequate follow-up service to keep in touch with ex-cases and to investigate what kinds of adults evolve. Expressions of gratitude are duly appreciated but a scientific assessment requires appraisal of both failures and successes.

Miss Reed's inauguration as Speech Therapist was previously described. The 40 patients under treatment during 1946 were classified according to defects already defined, viz.:—

Stammerers: 21 boys .. ..	25
4 girls, 3 were dyslalic also }	
Dyslalics: 9 boys } .. .. .. ..	10
1 girl }	
Cleft palates: boys .. .. .. ..	2
Aphasic: boy .. .. .. ..	1
Minor defects: boys .. .. .. ..	2

Twice weekly treatment was given individually, except in the case of stammerers whose largest group never exceed four. Attendances were regular and good co-operation was maintained by a majority of parents. Of the 18 patients discharged during the year 7 had made great improvement, 6 moderate improvement and 5 little or no improvement.

